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The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. No. 5. TULSA, OKLAHOMA, JUNE 26, 1924

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Crude Production Registers Decline

Average daily production in United States week ended June 21, 2,006,490 bbls. Loss over previous week, 7,247 bbls.

Big Well Completed in Reagan County, Texas, May Open New Field. Cotton Valley, La., Still in Limelight

By Andrew M. Rowley

Highest daily average estimated production this year, week ended June 14, 2,013,737 bbls. Lowest, January 12, 1,871,143 bbls.

For the first time since the week ending May 10, a decrease was shown in the quantity of crude petroleum produced in all the oil fields of the United States when the output during the past week averaged 7,247 barrels daily less than it had the week preceding. The decline was registered in the Luling Field in Texas, which fell off 6,000 barrels a day in its average; in the Burbank Field in Oklahoma which dropped nearly 4,000 barrels daily, and in the Powell Field in Texas which slumped more than 2,000 barrels daily. A subsantial gain, based on its previous output, was recorded in the Cotton Valley Field in Louisiana, production there jumping from an average of 1,700 barrels for the week ending June 14 to an average of 6,000 barrels daily last week. In addition, further completions and a greater output from wells already producing, are expected to increase this average during this week in that particular field.

There were three outstanding developments during the week in the situation affecting the production of crude petroleum. The first was the seeming failure of efforts conducted during the past several weeks in Oklahoma to effect a curtailment of operations and a shutting in of flush wells in several of the fields. While sentiment expressed at meetings held has been almost unanimous that a shutdown movement is desirable and necessary if present crude oil prices are to be maintained, proration avoided and the industry saved from the effects of overproduction such as were experienced during the latter part of last year, it has been found almost impossible to get operators to agree to actually shut in producing wells. They claim such action might ruin the wells and they are unwilling to take such a risk. It is believed, however, the meetings held have been beneficial in that they seemed to have resulted in a slackening of wildcat operations and drilling considered unnecessary at this time.

A development of prime importance during the week was the bringing in by the Big Lake Oil Company (Benedum and Trees interests of Pittsburgh) of its No. 9 University Land, in Reagan County, Texas, the well being reported as flowing at the rate of 60 barrels an hour of oil ranging around 35 degrees. It appears this well marks the opening of a new field in that territory where several companies have been operating for two years.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended June 21 and a comparison with previous week follows:

	June 21	June 14
Oklahoma—Northern Fields:		
Tonkawa	36,275	36,200
Burbank	93,280	97,125
Other Osage Fields	46,700	45,200
Cushing and Shamrock	23,825	23,850
Bristow and Eastern Bristow	50,450	51,150
Cromwell	28,750	27,700
Stroud	21,250	23,265
Northern Miscellaneous	99,525	99,540
Southern Fields	75,500	75,725
Total Oklahoma	475,555	479,755
North Louisiana	58,430	56,130
Arkansas—		
El Dorado and Calion	12,735	12,715
Smackover Light	37,070	37,325
Smackover Heavy	102,310	101,580
Stephens and Nevada County	3,620	3,770
Total Arkansas	155,735	155,390
North Central Texas	129,070	128,160
East Central Texas, Mexia, Currie, Corsicana, Powell)	122,960	125,780
Kansas	75,775	74,125
Total Mid-Continent Area	1,017,525	1,019,340
Gulf Coast	80,055	80,357
Southwest Texas	48,995	54,950
Eastern	107,700	106,975
Wyoming-Montana	127,215	127,815
California—		
Santa Fe Springs	59,000	63,000
Long Beach	165,000	162,000
Huntington Beach	46,000	48,000
Torrance	58,000	56,000
Remainder of State	279,000	295,000
Total California	625,000	624,300
Total United States	2,006,490	2,013,737

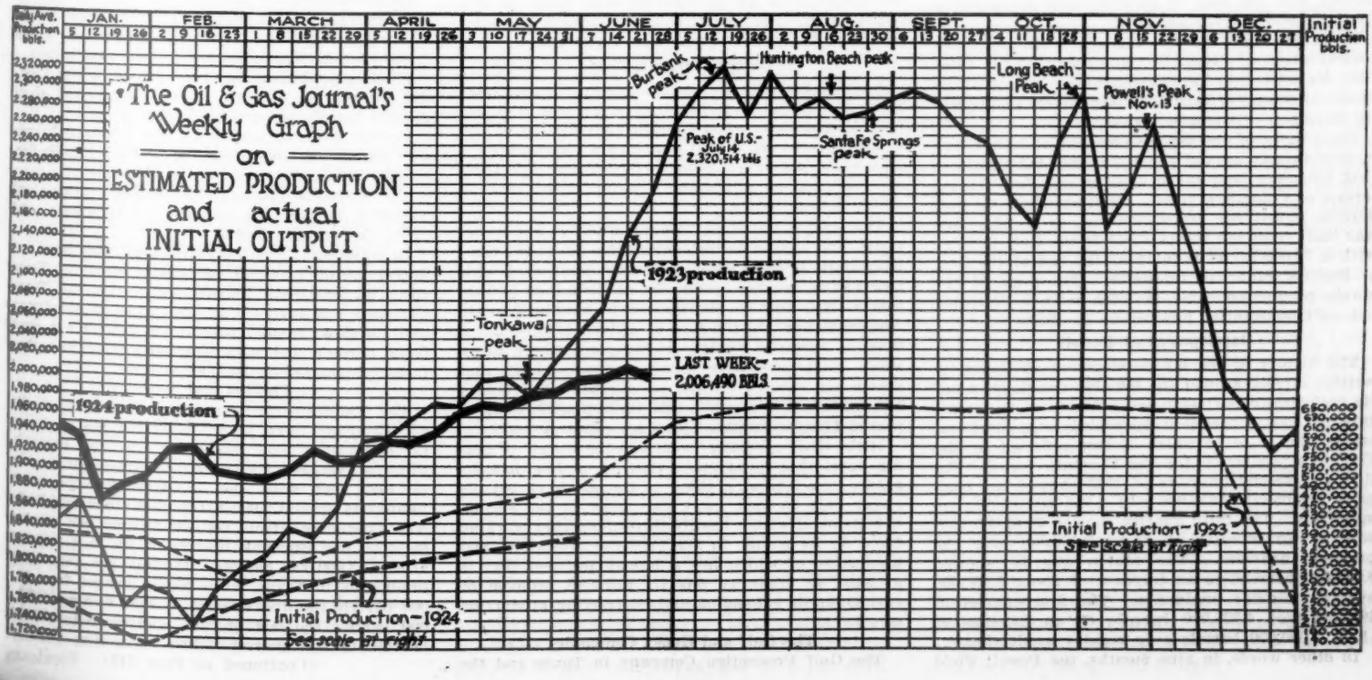
Decrease, 7,247 Barrels

The discovery well in the district was completed last year by the Texon Oil & Land Company and, when drilled into the sand on May 28, 1923, started at the rate of 150 barrels a day. It has been producing better than 100 barrels a day since. Other wells drilled after the discovery have made anywhere from 40 to 140 barrels a day. The new well was drilled only 3 feet into the sand at 2,982 feet and the tools were still in the hole when the well was flowing.

As an example of why there is so much interest in the Cotton Valley Field in Louisiana, the Gulf Refining Company's No. 1 A. J. Hodges which had come in making 600 barrels of oil and 12,000,000 feet of gas, blew in a little later with a production estimated at 10,000 barrels of oil. The well sanded up and bridged over several times and its ultimate outcome is somewhat in doubt. The only real activity being displayed in Louisiana at this time is in the Cotton Valley where there were 22 rigs running with five more rigging to drill, five derricks up and one location.

Production of crude in California during May averaged 3,538 barrels a day less than in April. Despite the fact the output of fields outside the Los Angeles Basin has been showing an increase, the decline in the three big flush fields which caused the trouble last year—Santa Fe Springs, Long Beach and Huntington Beach—has been sufficient to offset the gain in other sections of the State.

In Oklahoma, the Comar Oil Company's No. 1 Duncan near the Kansas line north of Blackwell in Kay County, flowed 30,000,000 feet of gas. The well is located in what was considered rank wildcat territory and may mark the opening of a new field. A decline in the output of Burbank Field resulted in the total production of the State showing a falling off of about 4,000 barrels daily. Big wells continue to mark operations in the Cromwell Pool, the Gypsy Oil Company getting a 4,000-barrel producer during the week. Two wells were about due to reach the deep sand in the Tonkawa Field. The two wells now producing from that sand have averaged 2,600 barrels daily each and there are 47 wells drilling toward this sand. This drilling is one of the menacing features of the present situation because it is believed these 47 wells will swell production greatly when they reach the sand.

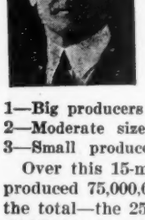


"Who's Who" in Texas Oil Production

Five Companies Produced 49 Per Cent of All the Crude During 15 Months Period. About 900 Producers in State

By Charles E. Bowles

A "cross section" of the history of crude oil production in Texas reveals about the same general condition that prevails in Oklahoma.



Taking the period from January 1, 1923 to March 31, 1924, Texas produced over 151,000,000 barrels of oil. This oil was produced by an average of about 900 corporations, partnerships, trusts, syndicates and individuals that can be classified under three general heads:

1—Big producers 5
2—Moderate size producers..... 25
3—Small producers 870

Over this 15-month period the five big companies produced 75,000,000 barrels of oil, or 49 per cent of the total—the 25 moderate size producers furnished 36,000,000 barrels, or 24 per cent—and the small producers 40,000,000 barrels, or 27 per cent.

During the same 15-month period, Oklahoma produced 197,000,000 barrels of oil. The 12 big companies produced 107,000,000 barrels, or 54 per cent—the 24 moderate size producers furnished 44,000,000 barrels, or 23 per cent—and the small producers (an average of about 1,300 of them) 44,000,000 barrels, or 23 per cent.

The Two States Compared

Arranged in tabular form the comparative production of the two States would be as follows:

Producers	Texas	Oklahoma
Large . 5-	75,011,350—49%	12-107,356,332—54%
Medium 25-	36,223,446—24%	24- 44,731,991—23%
Small ..870-	40,341,722—27%	1300- 44,940,867—23%
Total 900-	151,576,518	1336-197,029,190

In Texas in 1923, the primary producing area was Mexia-Powell—the secondary area, Wichita County (Burkburnett, Electra) and the area of greatest new development Archer County, with Luling coming in at the close of the year.

In Oklahoma, in 1923, the primary producing area was Tonkawa—the secondary, Burbank, with Creek County, the "old reliable" producing over 34,000,000 barrels, and the area of greatest new development Seminole and Hughes counties.

In Texas there are five big crude oil producing companies—Gulf, Humble, Humphrey (now Pure Oil), Magnolia and Texas companies—each of which produced a total of over 1,000,000 barrels each qaurter during the 15-month period.

The history of the big development at Mexia was written largely around the Humphrey Oil Company that has since been taken over by the Pure Oil interests of Columbus, Ohio. Its tremendous oil production called for transportation, so a pipe line was built from the Mexia Field to the Gulf Coast—with a 15,000-barrel refinery at the end of the line, at Smith's Bluff, on tidewater. The peak of the Mexia production came in 1922, with a declining but still substantial production in 1923.

Development at Powell

The history of the big development at Powell is written largely around the Humble Company. After its geological department had worked out the structure its land department assembled large blocks of leases, the value of which is best reflected by the Humble's production for the 15-month period The first and second quarters of 1923 showed the company producing 2,335,000 and 2,424,000 barrels respectively. The third quarter showed 5,243,000 barrels, or an increase of about 3,000,000 over the previous quarters. The fourth quarter showed 8,022,000 barrels, or an increase of about 5,600,000 over the regular production. The first quarter of 1924 showed 4,328,000 barrels, or an increase of about 2,000,000 barrels over regular production.

In other words, in nine months, the Powell Field was worth, to the Humble company, something over 10,000,000 barrels of oil.

During the third and fourth quarters of 1923 the Humble-Pure Oil people picked up about 3,000,000 barrels, over their regular production.

Big new fields either make a few little companies big, or a few big companies bigger. It comes quickly and the special advantage to the big company lies in the fact that it already has a completely rounded-out and experienced organization, which not only knows exactly what to do, under the terrific impetus of an increase of one, three or five million barrels of oil in a 90-day period, but who have the finances to handle the expansion.

No. Companies—	1923 1st Quar.	1923 2nd Quar.	1923 3rd Quar.	1923 4th Quar.	1924 1st Quar.	Totals
1. Gulf Production Co.	2,730,950	2,796,302	3,293,161	3,976,439	3,270,183	16,067,035
2. Humble Oil & Refining Co.	2,335,500	2,424,020	5,243,749	8,022,993	4,328,893	22,355,155
3. Humphreys-Pure Oil	2,313,685	2,271,839	4,321,628	3,245,278	2,474,157	14,626,587
4. Magnolia Petroleum Co.	1,307,669	1,302,923	2,079,272	1,763,783	1,462,278	7,915,925
5. Texas Company	2,955,737	2,794,657	2,627,666	3,219,397	2,449,191	14,046,648
Totals	11,643,541	11,589,741	17,565,476	20,227,890	13,984,702	75,011,350
Per cent	47	46	52	51	49	49
1. Atlantic Oil Producing Co.	219,046	.....	805,012	1,421,163	646,175	3,091,396
2. Empire Gas & Fuel Co.	119,251	108,528	93,206	110,469	103,143	534,297
3. Galena-Signal Oil Co.	163,178	160,391	173,646	174,077	146,053	817,345
4. Grayburg Oil Co.	119,584	114,064	285,819	160,257	279,168	958,892
5. Hughes Development Co.	60,405	147,007	394,107	205,429	189,791	996,739
6. Hughes Oil Co.	219,071	241,429	198,676	159,506	138,840	967,522
7. Lewis Oil-Na.-Re. Co.	209,610	220,042	138,596	114,273	89,629	772,150
8. Mid-Kansas Oil & Gas Co.	192,628	177,439	102,709	156,898	160,075	789,749
9. McMan Oil Co.	66,241	73,334	419,764	142,760	187,102	889,201
10. Panhandle Refining Co.	99,804	172,523	162,562	142,701	162,139	739,729
11. Planet Petroleum Co.	231,529	145,333	177,102	153,722	104,975	812,661
12. Prairie Oil & Gas Co.	153,800	146,309	97,362	124,886	94,444	617,301
13. Republic Production Co.	433,670	523,755	619,684	802,904	1,187,902	3,567,915
14. Rio Bravo Oil Co.	116,910	147,175	.....	137,508	193,179	594,772
15. Roxana Petroleum Corp.	61,040	63,140	408,394	550,795	292,080	1,375,449
16. Simms Oil Co.	335,263	326,061	291,725	546,631	863,119	2,362,799
17. Sinclair Oil & Gas Co.	241,435	320,358	181,554	255,419	233,291	1,232,157
18. Skelly Oil Co.	20,044	147,855	73,846	596,220	149,767	987,732
19. Snowden & McSweeney	174,515	303,939	254,561	181,206	141,670	1,055,891
20. Sun Co.	267,600	458,598	621,887	530,386	432,819	2,311,290
21. Texas Pacific Coal & Oil Co.	605,285	578,358	314,832	497,631	454,259	2,450,665
22. Texhoma Oil & Refining Co.	402,650	689,790	579,507	480,131	554,374	2,706,452
23. Tidal Oil Co.	23,013	28,042	476,435	1,259,049	678,440	2,465,579
24. United North & South Oil Co.	5,614	8,673	354,076	844,024	1,026,606	2,238,993
25. Western Oil Fields Corp.	312,520	319,175	284,040	436,385	347,270	1,709,390
Totals	4,853,696	5,622,018	6,709,002	10,182,430	8,856,300	36,223,446
Per cent	20	22	20	25	31	24
All other products	8,185,853	8,195,624	9,129,307	9,147,203	5,863,735	40,341,722
Per cent	33	32	28	24	20	27
Grand total	24,503,090	25,407,383	33,403,785	39,557,523	28,704,737	151,576,518

Value of Organization

Another equally vital advantage to the big company lies in the fact that it was big before it got bigger—and that, when the flush production of the new field went off, it still remained a big company—and could gradually reduce its organization from an abnormal to a normal working basis, and be where it was before.

The vital value of an "organization" is not recognized, and cannot be recognized, by the small company until it finds itself suddenly confronted with new and increasing production of thousands of barrels a day—and no organiation to handle it with. And right here, in the fact of a flood of oil—and a flood of potential wealth—is the place where many small companies have taken counsel wisely and grown big, substantial and successful—while others have "lost their heads"—and their properties have passed into the hands of stronger people.

If the little company "weathers the storm" of taking care of a production that in a few months grows from almost nothing to thousands of barrels a day only to melt away like snow in the spring, it finds itself with a hastily thrown-together working force on its hands, in the "reverse evolution" and unification of which lies a human problem that is at least as great as was its physical problem of caring for its expanding and contracting production of oil.

The Gulf and Gypsy Companies

The Gulf Production Company in Texas and the Gypsy Oil Company in Oklahoma, both subsidiaries of the Mellon interests of Pittsburgh, have had quite different experiences during the last two years. The Gypsy, in Oklahoma, was producing about 1,000,000 barrels per quarter until the big production in the Burbank started in 1922, when it jumped to over 3,000,000 barrels the last quarter of the year and to 5,000,000 barrels the second quarter of 1923. In Texas, during the same period, the Gulf Production Company rode along on an even keel of about 3,000,000 barrels a quarter.

In Oklahoma, the Humble Company, during the same two years, was averaging about 500,000 barrels a quarter, while in Texas its production jumped from over 2,000,000 barrels to 8,000,000 barrels.

Sinclair production has been running about 1,500,000 barrels per quarter in Oklahoma—and about 250,000 barrels per quarter in Texas.

Prairie has averaged well over 1,500,000 barrels per quarter in Oklahoma—and about 125,000 barrels in Texas.

The Magnolia Company has been averaging about 1,500,000 barrels per quarter in Oklahoma—and about the same in Texas.

In Oklahoma, The Texas Company has been producing about 1,000,000 per quarter—and in Texas close to 3,000,000. Twenty years ago The Texas Company was born out of the travail of Spindletop, and its slow, steady, substantial growth has come from regular, everyday development, rather than from "sitting in" on big new fields.

Phillips and Skelly

The Phillips Petroleum Company and the Skelly Oil Company have been among the big producers in Oklahoma, and especially in the Burbank. Phillips averaged about 500,000 barrels per quarter in 1922, but with the Burbank development it jumped to around 2,000,000 barrels a quarter. Skelly was producing about 600,000 barrels per quarter in 1922, but Burbank brought it up to a peak of around 3,000,000 barrels. Phillips has very little production in Texas, while Skelly jumped from 20,000 barrels the first quarter of 1923 to almost 600,000 barrels the last quarter, and down to 150,000 barrels the first quarter of 1924.

(Continued on Page 112)

Explaining Oil Business---Article 11

If the Public Were Told the Facts It Would Give Them a Wholly Different Idea About the Price of Gasoline

Q—How many States have gasoline taxes at the present time?

A—Thirty-five States have gasoline taxes. In addition the District of Columbia has a tax. In one State the tax is 4 cents a gallon, nine States 3 cents, fifteen States 1 cent. two States 2½ cents and eight States 1 cent. The tax in the District of Columbia is 2 cents. The number and the rate is constantly increasing. In 1922, 18 States had the gasoline tax and the tax was only 1 cent except in three States where the tax was 2 cents. Since the first of this year one State has increased a 1 cent tax to 2½ cents, one State from 1 to 2 cents and two States from 1 to 3 cents a gallon. In addition the 2-cent tax in the District of Columbia became effective since the first of the year.

Q—Do these gasoline taxes add to the cost of gasoline to consumers?

A—In practically all cases the gasoline consumer pays in full the entire gasoline tax. When a new tax becomes effective or the rate is increased it is customary for the wholesalers and retailers of gasoline to advance their prices the full amount of the tax which they are required to pay the Stote or city. In 1923 gasoline consumers paid $36,813,939 for these taxes. This was an increase from $5,000,000, the estimate as to revenue derived from the taxes in 1922. It is estimated that in 1924 the taxes will cost the gasoline consumers a minimum of $75,000,000. These figures do not include city taxes on gasoline also increasing rapidly.

Q—Is it not a fact that the States and cities which have these gasoline taxes use all the revenue for the benefit of the gasoline consumers and the oil industry which pay the cost?

A—Unfortunately this is too often not the case. Data compiled for 1923 show that during 1923 of the total collection of $36,813,939 by the States only $21,528,559 was used for the building or maintenance of highways. In several cases only a small fraction of the revenue is used for highways or any purpose of special benefit to the consumers who foot the bill.

Q—Does the oil business have any other special taxes outside of the gasoline taxes just mentioned?

A—There is no major industry called upon to pay so many taxes of a special nature as the oil business. Starting back with the production of crude oil most States where oil is found levy a direct tax of one or more cents on every barrel of oil produced in the State. There are also the inspection and license taxes of every conceivable kind enforced by States and municipalities. These inspection taxes vary greatly but in many instances they add from 5 to 10 per cent to the final cost in placing the product in the hands of the ultimate consumers. All of these special taxes are of course in addition to the regular property and income taxes which oil companies and individuals pay the same as in any other line of business.

Q—Is there any relation between the crude price at the wells, the gasoline price at the refinery and price paid by the consumer of gasoline?

A—There is a very direct relationship between these three markets of the oil industry. Price changes involving the three markets do not, of course, occur at exactly the same time. This is obviously impossible when the thousands of companies and individuals engaged in the oil business is considered coupled with the fact that fundamental conditions having to do with supply and demand do not affect all sections of the countries in the same way and at the same time. However, considered for several months or a longer period this relationship is very apparent. For instance the high price for 35° to 36.9° gravity crude in Oklahoma during 1923 was $2 and the low $1. The highest price received by a Oklahoma refiner for New Navy gasoline—the grade which furnishes the bulk of the motor fuel—was 14½ and the low 6⅛ cents. In Chicago, the center of an area in which a substantial part of the Oklahoma gasoline is sold, it brought a top price of 22 cents at the service stations during the year and sold as low as 14 cents for a considerable period. This shows clearly the general relationship between the prices mentioned. The same approximate relationship existed in regard to crude, refinery and service station prices in all sections of the United States during 1923.

Q—Why is it that many companies raise or lower their gasoline tank wagon and service station prices in line with the changes established by the marketing organizations which before the dissolution were part of the Standard Oil Company?

A—There is no special reason for this situation where it now exists. As in every line of business companies engaged in the wholesaling and retailing of refined products will usually follow in a general way at least the price leadership of the concern conceded to be the largest single seller of the products. In the old days before the dissolution of 1911 the Standard Oil Company sold more refined products to the ultimate consumer than all its competitors combined. This situation no longer exists for the several Standard companies and their subsidiary and allied organizations occupy a minor role when the entire industry is considered. In many instances it will be found that other companies sell more gasoline and other products over a considerable area than does a Standard company. The many changes made in tank wagon and service station prices recently by the so-called independent companies indicates that there is nothing to prevent them changing their prices whenever in their opinion it is justified.

Q—What part in the cost of operating an automobile does gasoline and lubricating oil play?

A—The answer to this question depends partially on the kind of automobile and for what purpose it is used. In all cases it will be found that the cost of the gasoline and oil is comparatively low when total costs are considered. For instance a recent investigation for a period of a year reveals the following distribution of costs: Garage rent or its equivalent, $60 or 12 per cent; depreciation, $150 or 30 per cent; tires, $30 or 6 per cent; insurance, $18 or 3.6 per cent; repairs, $75 or 15 per cent; license and taxes, $25 or 5 per cent; gasoline, $78 or 15.6 per cent and oil $10 or 2 per cent. The total cost for the years was $500.

Q—How much does it cost to ship gasoline from the refineries to the towns and cities where it is sold to the consumers?

A—This, of course, depends directly on the freight rates established by the carriers. A general idea of the difference in freight rate cost per gallon of gasoline can be obtained by comparing rates from a given point. The cost per gallon of gasoline can be obtained by comparing rates from a given point. The cost per gallon from most refineries in Oklahoma to Chicago is 2.38 cents, Albany, N. Y., 5.04 cents; Annapolis, 5.51 cents; Basin, Wyo., 8.05 cents; Boston, Mass., 5.28 cents; Butte, Mont., 8.18 cents; Cleveland, Ohio, 3.7 cents; Kansas City, Mo., 1.68 cents; Los Angeles, Cal., 7.49 cents; Minneapolis, Minn., 2.64 cents; Philadelphia, 5.01 cents; Tampa, Fla.. 6.67 cents; Wichita, Kans., 1.58 cents and Washington, D. C., 5.01 cents. Some of these points are closer to refineries located in other States and for that reason their actual freight cost is less.

Q—I have just returned from a tour from the Atlantic to the Pacific Coast. In New York City I paid 23 cents for my gasoline, Pittsburgh 25 cents, Ohio 22 cents, Indianapolis 22.2 cents, Chicago 20 cents, Omaha 20 cents, Salt Lake City 26 cents and Portland, Ore., 22 cents. How do you account for this price range?

A—In the first place let us clear the situation by eliminating the State gasoline taxes which you paid along part of your tour. In Pennsylvania you paid a State tax of 2 cents, in Indiana 2 cents, Utah 2½ cents and Oregon 3 cents. Eliminate these taxes and you paid the following prices for your gasoline: New York 23 cents, Pittsburgh 23 cents, Cincinnati 22 cents, Indianapolis 20.2 cents, Chicago 20 cents, Omaha 20 cents, Salt Lake City 23.5 cents and Portland 19 cents. You paid less for your gasoline in Omaha, Chicago and Indianapolis than you paid in points farther east because you were closer to the great crude producing fields centering in the Southwest. Crude oil is found in Ohio, Pennsylvania and New York but supplies only a small fraction of the gasoline requirements of that section so their prices are based primarily on what it costs to ship it there from distant points. You paid more in Salt Lake City and less in Portland, Ore. for the same reason. The latter city is near the large crude producing fields of California while Salt Sake is located in that Rocky Mountain region where long hauls are necessary from the refineries. Do you realize that if you had been buying sirloin steak in each city you visited you would have paid according to a recent monthly report of the Bureau of Labor 42.3 cents in New York, Pittsburgh, 43.2, Cincinnati, 34.1 cents, Indianapolis, 35 cents, Chicago, 40.9 cents, Omaha, 36.2 cents, Salt Lake City, 26 cents and Portland 27.8 cents. You would have found a similar difference in price in practically everything you bought.

Higher Gasoline Prices in Group 3

Export Purchase of New Navy and Aviation Again Aids Market. Fuel and Gas Oil Prices Continue Upward. Neutrals Are Weak

By C. O. Willson

An export order and rumors of other purchases were largely responsible for the advance in Group 3 (Oklahoma) gasoline prices during the past week. Up to this writing the advance for the week has totaled from ½- to ¾-cent with natural gasolines and blends sharing in the upward trend. In addition to this somewhat unexpected development there were further price advances in fuel and gas oils which first gave indication of strength the previous week. Altogether, from the standpoint of price strength, the week was one of the most favorable of the year, although kerosenes and distillates continued to slow up with neutrals and cylinder stocks weak, resulting in further price reduction by some refiners.

The export purchase mentioned was made by the Carson Petroleum Co. with all refining areas of the Mid-Continent sharing in the most important order that has been made since that of the Standard Oil Co. of New Jersey, the middle of May. While no definite official announcement has been made by the buyer as to the amount of the purchase available, information would indicate that it covered approximately 7,500 000 gallons of gasoline, principally New Navy, with some 64-66. 375. With previous purchases this is understood to have brought the company's total purchases from Mid-Continent refiners for June to a total of 9,000,000 gallons of New Navy and approximately 2,500,000 gallons of 64-66, 375 and 64-66, 390.

Several plants in Group 3 shared in the export purchase of the past week and practically all plants are understood to have been given the opportunity to participate in the business. Several plants realizing that the purchase would boost the market would not sell at the price offered the high of which was 8½ cents. The Empire Refineries, Inc., is understood to have sold the largest amount in Group 3 with the other companies participating taking comparatively small orders.

Sent Price Upward

The effect of the purchase in the refined market were very apparent. When the purchase first became known, the latter half of last week, New Navy had slumped to 8¼ cents, with scattered orders being placed for immediate shipment at 8 cents. When it became known that an export order was in market the prices started up and with the opening on Monday there was not a major plant in Oklahoma openly offering New Navy under 9 cents for immediate shipment and a few were asking 9¼ and 9½ cents. Rumors of additional purchases were also an important factor in the upward trend. It was reported and believed by many that the Carter Oil Co. (Standard of New Jersey) was in the market and other exporters as were credited with making inquiries preparatory to buying.

These rumors are mentioned because they have contributed to building up what many market observers fear may prove an artificial price structure and will slump slightly because it will not have the sustained buying necessary to maintain it. As has been pointed out in these columns weekly for the past month many who keep in close touch with market developments have felt that the time had arrived for at least firm gasoline prices with probably a condition which would merit a slowly advancing market as soon as the crude and tank wagon markets became more settled. But none have felt that general conditions, both in regard to gasoline and crude situation, merited a large over night advance of nearly 1 cent and they were inclined to class some of the developments of the past week as unfavorable rather than favorable.

The advance was aided by the fact that several refineries had already contracted for all they cared to sell in June and in many instances did not have the tank cars to take on additional business over the remainder of the month. They boosted their prices so as to stay out of the market and, encouraged by the export business, refiners who have material to move have joined them so the price improvement has practically unanimous support at this time.

Domestic Movement Slow

Some sales at higher prices were being made on Monday and Tuesday, but as usual, when prices make a sensational advance, the general domestic movement was slow. It will require several days to determine whether the buyers' or sellers' position is to be maintained Further export business would be a great aid and some of the trade expect it to develop before the close of the week. There can be no question that the refining industry is in better shape now to hold and advance its prices than it was in May when the Standard Oil Co. of New Jersey came to the rescue with a 10,000,000-gallon purchase only to have the market continue its downward course after an advance similar to the one of the past week. Consumption now is much heavier than it was then. However, there are still heavy stocks of gasoline everywhere and an export purchase in one section cannot of itself overcome a fundamental situation applying to the entire industry.

The crude situation is also a further factor to be considered. There has been no general improvement in the acute situation prevailing in the Mid-Continent area and market observers list that fact as an additional feature which calls for conservative action on the part of refiners in their endeavor to get their gasoline prices to the point where they will permit at least an even break in plant operation. A 9-cent New Navy will not solve the problem of the average Oklahoma refiner if present crude prices are maintained. A bottom price of 12 cents is probably necessary for an even break and this would not prevent large inventory losses. Many refiners are still expecting a downward revision in crude prices and are endeavoring to arrange their inventories and operations so as to take full advantage of the lower crude if it materializes. Other see in the stronger gasoline prices of the past week a development which will greatly aid the larger companies in their apparent determination to maintain the present posted crude schedules.

Tank Wagon Market

There were further developments in the general tank wagon markets which tend to nullify recent predictions that it would be possible to go through the summer without any general reductions in tank wagon and service station prices. The reductions which include the Standards of Ohio and Kentucky territories are explained in detail in the Tank Wagon Market page of this issue. With the recent reductions in the Continental Oil Co. territory, lower prices now prevail in practically all sections adjoining the Standard of Indiana territory. With the wide publicity that is being given these reductions, together with the numerous local price wars, the pressure for a general reduction is becoming stronger daily and it is possible that even the Standard of Indiana will be forced to take action regardless of reduction in crude prices in the Mid-Continent Field. More and more of the trade in Group 3 are taking the position that an unsettled crude and tank wagon condition such as now exists, tends to weaken the refinery market more than would an actual reduction. They believe that the refinery gasoline market has already largely discounted these reductions and once they materialize, there will be a rapid readjustment which would be permanent at least for the summer months.

Gasolines and Naphtha

Previous to the advance in gasoline prices, due to the export purchase, the domestic buying was excellent. The movement is still good but it comes from orders previously placed for delivery before the end of June. July business is now being given the major consideration. There are a great variety of offers for July delivery, indicating the difference of opinion prevailing within the trade as to what will be the trend over the month. Few orders have actually been placed up to the persent time. Refiners are asking as high as 10 cents for July delivery, while many buyers are keeping their offers under 9 cents.

Both buyers and sellers generally are not inclined to speculate due to the uncertain conditions. Several marketers were caught short in the advance of the past week and several made purchases over June the latter part of May which they regretted. Movement on contracts continues to improve in most cases.

Several refiners reported an improvement in the domestic movement of the higher gravity grades. The movement is below normal, however. Many plants have arranged their operations so that by blending their higher gravities with naphtha practically the entire output is New Navy or 56-58. This has aided in preventing a top-heavy accumulation of the higher gravities. Refiners do not have difficulty in moving their small naphtha output, although they advance and lower their prices generally with the New Navy market.

Kerosene and Distillates

There was practically no change in the kerosene and distillate situation. The 42-43, water white grade is available as low as 4¼ cents and the 41-43 grade sold at a low of 4 cents. Buyers were endeavoring to shade these prices but refiners had a fair movement with many moving their output direct to trade at ¼- to ½-cent above the quotations just given. It is believed that the demand from the rural sections will continue fairly strong over the harvest season. No export buying is in evidence in Group 3.

Natural Gasolines and Blends

Natural gasolines advanced with the straight run products during the past week. The natural gasoline manufacturers themselves were not expecting so large an advance and at least two concerns which buy as well as manufacture were caught short in their June deliveries.

The price advance was a reflection of the higher prices prevailing in the straight run market. The advancing market brought more active buying from purchasers anxious to cover. Cooden & Co., a steady purchaser of Grade C is reported to have advanced its price to 7½ cents, delivered at its West Tulsa plant. Other refiners made heavier purchases than usual during the past week. Grade A in the group has been advanced to a low of 7 cents with a corresponding advance in other grades. Continued heavy buying will be necessary to maintain present prices and this in turn will probably hinge on the straight run market. Blenders have not advanced their prices as fast as the straight run gasolines. The movement is unchanged.

Fuel and Gas Oils

Both fuel and gas oil advanced in price. The low in fuel oil in Oklahoma is 60 cents, applying to 24-26 and the lower gravities. Recent heavy buying is responsible for the higher prices. It is believed there will be enough buying to maintain present prices until there is a change in the crude market.

The demand for gas oil has also been strong. A purchase of three or four car-

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REFINED MARKET BAROMETER

Although there were several important reductions in tank wagon prices, both local and of a general nature, gasoline prices at the refineries during the past week were generally firm or advancing. The advances were generally confined to the Middle West and Mid-Continent areas with few minor changes in other sections. The consumption due to the hot weather is believed to have been the heaviest of the year. There was little change in the korosene market either in price or movement. Greater activity in distillates was apparent in some areas in preparation for the fall and winter maximum season. The improvement in fuel and gas oil which got under way last week is spreading rapidly with higher prices prevailing in most refining areas. Natural gasolines advanced in price ¼ to ¾ cents. Neutrals and cylinder stocks are generally weak with prices lower. Bright stocks are firm. There were no general changes in wax.

Mid-Continent—Export purchase by Carson Petroleum Co., in which all areas except Arkansas participated resulted in New Navy prices being advanced ½ to ¾ cents. Natural gasolines and blends advanced practically the same amount. Fuel oil and gas oil strong in all areas with prices higher in Kansas, Oklahoma and North Texas. Heavy purchases of both products. Kerosene movement slow with no general price changes. Lubricants unsettled with prices lower.

Atlantic Seaboard—No major changes in markets. Gasoline prices at refineries firm with an increase in movement. Lubricants and wax weak. Export market generally slow. Large shipments of kerosene to Germany and Holland.

Gulf Coast—Spot market in zero cold test oils weak. Jobbers confining their new purchases to immediate needs and refiners not protected by contracts are forced to take lower prices due to outside competition.

Pennsylvania—Cylinder stocks and neutral prices lower due to recent reduction in Pennsylvania crudes. Trade more optimistic regarding gasoline due to heavy consumption and prices generally are firm. Fair movement of kerosene with a temporary scarcity of some grades. Fuel oil soft.

Chicago—Hot weather aids gasoline consumption and movement from refineries. Prices generally higher. Good demand for kerosene. Activity in distillate market with some concerns contracting for fall and winter requirements. Lubricants weak.

Conference Declares for Publicity

Directors of American Petroleum Institute Meet With the Representatives of Eight Oil Associations at Atlantic City

By L. M. Fanning

ATLANTIC CITY, N. J., June 21.—Following three days of conferences here of and between various groups of the oil business, representing all national oil trade associations, agreement was reached that the industry, as an industry, should take steps to develop a program for the education of the industry and the public on facts relating to oil. A central committee was formed, comprising representatives named by associations other than the American Petroleum Institute and by the directors of the A. P. I. to work out a plan of action.

The concrete results of the meetings is that the board of directors of the institute committed itself to agreement that an educational program is desirable. But what form the plan will take is up to the central joint committee, and whether its plan, whatever it may be—will be adopted remains to be seen. The central committee is requested to present a plan within 30 days and the adoption or rejection of the plan, so far as the institute is concerned, will be determined by the board of directors at a subsequent meeting.

Asked by Associations

The meeting of the institute directors, just concluded, was called at the request of the eight outside national associations, acting as a unit. Previously, all these organizations agreed, in principle, that an educational program should be worked up and launched, and some of them came to Atlantic City prepared to present a definite working plan. Final agreement among them on their proposals to the institute board was reached at a meeting held here Thursday. On Friday afternoon at a joint conference of the representatives of these associations and members of the board of the institute, they formally presented their views which mainly stressed the desire that the institute take active participation in the movement.

The result of the discussion at this conference was unanimous agreement among all those represented favorable to the principle of an important program. A committee of the joint conference, comprising representatives of the associations and of the institute board, was appointed and instructed to draw up definite recommendations to be presented to the whole board as represented at Atlantic City. This committee of 12 met Friday night, and agreed to recommend the formation of a central joint committee with duties to formulate the real program, and to make concrete recommendations to the institute board.

Central Committee Formed

The directors, meeting this (Saturday) morning, approved the committee's recommendations for a central committee, and the committee was duly formed with a request that it report a plan not later than 30 days. The committee will comprise eight representatives of the national associations which initiated the present movement and nine representatives of the institute.

The former representatives have not yet been named but the institute representatives follow: Paul Shoup, president, Pacific Oil Co., Los Angeles, Cal.; Gov. B. B. Brooks, president, Consolidated Royalties Corp., Denver, Colo.; K. R. Kingsbury, president, Standard Oil Co. of California, San Francisco; J. Edgar Pew, vice president, Sun Oil Co., Dallas; J. A. Moffat, Jr., vice president, Standard Oil Co. (New Jersey), New York; E. C. Lufkin, chairman of the board, The Texas Co., New York; Edward Prizer, president, Vacuum Oil Co., New York; W. N. Davis, president, Mid-Continent Oil & Gas Association, (representing the institute), Bartlesville, Okla.; and R. L. Welch, secretary and general counsel of the institute.

Most Representative Meeting

The Atlantic City conferences were probably the most representative of the entire industry ever held. The meeting of directors of the institute and the joint conferences were called following formal request to the institute on the part of the other national associations that it act on the matter of an educational program. The associations joining in the request were the following: Mid-Continent Oil & Gas Association, Western Petroleum Refiners Association, Natural Gasoline Manufacturers Association, American Oil Men's Association, National Petroleum Association, National Petroleum Marketers Association, National Association of Independent Oil Men, and the Chamber of Mines & Oil. All these associations except the last two named had representatives at the meeting. There were some 20 directors of the institute present.

H. H. Smith, secretary of the Mid-Continent Oil & Gas Association, acted as spokesman for the national associations. At the joint conference he presented their views, stating the fundamental need of educating the public and the industry. This discussion brought out strong statements from many association representatives that in their section there was a big demand on the part of small and large oil companies that the facts about the industry be told the public and the industry.

It is understood that the central joint committee willl hold an early meeting in New York.

Kansas Oil Men's Association in Convention at Wichita

By C. O. Willson

WICHITA, Kans., June 21.—C. R. Howard, president of the Howard Oil Co., Mount Hope, Kans., was elected president of the Kansas Oil Men's Association at the business session held this morning in connection with the Tenth Annual Convention of the association in session here today and yesterday at the Broadview Hotel. Mr. Howard succeeds E. R. Rule of the Golden Rule Refining Co. of this city, who was president during the past year.

The convention, which closed tonight with the annual banquet, was one of the most successful ever held. One hundred and twelve registered during the two days' meeting and in addition there were many visitors. Reports show that the association has made great progress during the past year in membership, financial status and constructive work accomplished for the benefit of the refining and jobbing interests of the State.

The other officers elected at the morning session were C. B. White, Fort Scott Oil Co., Fort Scott, first vice president; M. D. Bell, Bell Oil Co., Lncoln, second vice president; C. E. McElvain, McElvain Oil Co., Phillipsburg, third vice president; A. W. Long, Long Oil Co., Manhattan, treasurer, and J. A. Motter, Wichita, secretary. The board of directors are Jerry Kimmel, Kimmel Oil Co., Robinson; A. C. Carpenter, Lesh Oil Co., Ottawa, and S. C. Porter, Porter Oil Co., Leavenworth. The executive committee consists of A. W. Long, Long Oil Co., Manhattan; F. A. Peilsticker, Skelly Oil Co., El Dorado, and C. L. Henderson, Vickers Petroleum Co., Wichita.

Delegates Entertained

All business sessions of the association were held in the roof garden of the hotel which also housed the booths of several exhibitors. In addition to the annual banquet at which Henry J. Allen, formerly Governor of Kansas, delivered the principal address, several entertainment features were provided by the association and the Wichita Oil Men's Club.

The Saturday afternoon session was devoted largely to a discussion of oil station equipment. E. P. Hayes, Hayes Equipment Co., Wichita; Claud Smith, Clear Vision Sales Co., Wichita; R. D. Gracey, Dayton Pump Mfg. Co.; P. R. C. Bridwater, Volcker Mfg. Co., and H. N. Wallis, Alemite Lubricator Co., Kansas City., Mo., explained their equipment. All advocated a campaign of education among filling station attendants in the use and care of equipment. Ideas for the promotion of sales were also discussed. W. B. Harrison, president of the Union National Bank, Wichita, spoke of the value of trade associations in all lines of business.

The independent refining and marketing interests are largely responsible for many of the evils existing within the oil business today, according to F. A. Peilsticker, president of the Western Petroleum Refiners' Association and vice president of the Skelly Oil Co., of El Dorado, Kans. Mr. Pielsticker in one of the outstanding addresses of the convention on Friday spoke on the general subject of "Oil Refining and Marketing."

"I believe that marketing costs have doubled since the war," Mr. Pielsticker said in discussing the evils existing in the marketing end of the oil business. "We are spending too much money for attractive stations, giving away too much free service which do not do our customers any good and which are resulting in unnecessary charges to the public for the products we sell them."

Too Wide a Margin

In speaking of the causes of this situation, Mr. Pielsticker said that the independent refiner was partially to blame in that during the past three years for a large part of the time there had been too wide a margin between the tank wagon price as obtained by the refiner and the service station price charged by the jobber to whom he sells. He pointed out that this situation had made it possible for the marketing end of the industry to largely increase its operating costs and still make a profit in the distribution of gasoline.

"This condition cannot continue much longer," he warned. "Fifty per cent of the time during the past three years we refiners have sold gasoline below the cost of production. This method of selling is inexcusable in the refining and marketing of petroleum products. It has resulted in large losses to the independent refiners and has injured you jobbers in that it has increased marketing facilities bringing a competitive situation which has made it impossible for some of you to operate profitably despite the wide margins with which you have had most of the time."

Facilities Adequate Now

"I believe that at the present time we have retail and wholesale marketing facilities enough so we could care for an increasing consumption over the next five years without the addition of any more bulk or filling stations. This is based on the assumption that gasoline consumption should continue to increase about 20 per cent yearly as it has in the past which would mean that total consumption five years from now would be approximately double what it is at the present time."

Mr. Pielsticker emphasized his contention that the day of 100 per cent margin over the price charged by the refiner for gasoline was over in the marketing end of the oil business. He said he had no patience with those who pre-

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Few Large Bids Expected at Osage Sale

Auction at Pawhuska Next Monday of Smallest Acreage Offered Since 1917 Includes 4,000 Acres West of Range 8

By C. D. Lockwood

The next convention of Oklahoma operators under the famous "million dollar tree" in the shadow of the Osage Indian Agency at Pawhuska, will present a striking contrast to the preceding gathering in the opera house of that historic town, on March 18 and 19. The chief interest of the fraternity at large in the June 30 auction of Osage leases in so far as it affects Burbank acreage, is concerned with speculation over the possibility of any bid reaching the half-million mark. The limited amount of acreage to be offered as well as the producing records of the offsetting tracts removes the coming sale entirely out of the class of former bidding contests, such as that of March 18 and 19, when the bonuses reached the grand total of $14,156,800, the greatest amount ever paid and a record which will probably stand for all time. Companies are checking the acreage closely, however, and will not let any piece slip by for less than it appears to be worth.

The tracts to be offered this time total only 19,945.41 acres, the smallest amount that has been listed in the Osage sales since 1917. This includes 105 tracts comprising 15,945.41 acres, lying east of Range 7, and 25 tracts comprising 4,000 acres, lying west of Range 8. Only 11 of the latter are in the Burbank district, and seven of these adjoin the tracts which commanded record-breaking prices in March. One of the other four is a quarter section formerly owned by the Amerada Petroleum Corp., and three are on the southern edge of the producing area. In March over 100,000 acres were offered.

Question of Price

As in the case of former sales, numerous wagers are being laid on the amount of the highest bid. Many do not expect any tract to bring more than $500,000, with the possible exception of No. 118 or No. 119, both of which offset the Phillips Petroleum Co.'s lease in the southwest quarter of Section 11-27-5, which has so far proved to be the best along "million dollar row." The location and ownership of gasoline plants in the field will probably affect the bidding on the tracts, however, and the well known "human element," which has manifested itself at all auctions since time immemorial, will doubtless upset the dope again this time.

The accompanying map shows the location of the tracts to be offered next Monday as well as the total production of each tract to June 11, 1924, the date when production began and the bonus price paid for each lease in the Osage County part of the field.

It is interesting to note that the best of the new leases, the Phillips Petroleum Co.'s tract in the southwest quarter of Section 11-27-5, had produced, up to June 11, 105,210 bbls. from 13 wells, the first of which came in during May. The daily average per well on June 11, was 490 bbls. The only two wells on the entire new acreage which reminded the operators of old days when the field was in its prime were No. 8 and No. 12, on this quarter section, which were good for 2,700 bbls. and 2,450 bbls. respectively, following shots. Both of these wells are located along the east line of the tract and this should generate a few sparks of enthusiasm when Tract No. 119, offsetting them to the east, comes up for sale.

Offset High Priced Tracts

Offsetting Tract No. 122 is the Midland Oil Co.'s $1,990,000 lease in the northwest quarter of Section 14-27-5, which had produced 28,700 bbls. up to June 11, with 12 wells making oil at the average rate of 192 bbls. each, per day. On the south of the same unsold tract is the Cosden Oil & Gas Co.'s $1,955,000 luxury which had produced 14,007 bbls in practically the same length of time, and whose 13 wells were averaging 85 bbls. a day on the latter date. This would indicate a very small addition to the wealth of the Osage Indians when Tract No. 122 is knocked off by the auctioneer.

The Prairie Oil & Gas Co. completed one good well for 1,200 bbls. in the southwest quarter of Section 13-27-5, but it was an inside location, and the 13 wells brought in up to June 11, had produced only 42,945 bbls. and the daily average per well was less than 200 bbls., so the bidding should not be unusually fervent on Tract No. 121, which is directly north of it. The Midland Oil Co.'s lease in the southeast quarter of Section 13-27-5, had likewise made only 41,888 bbls. up to June 11, with 13 producers contributing 2,256 bbls. daily to the output, so the prospects for a high price for Tract No. 120, which offsets it to the north, are not good. The Twin State Oil Co. had brought in 11 wells on its lease in the southwest quarter of Section 18-27-5, from which it had received 27,755 bbls. of oil. This lease offsets Tract No. 110 which is to be offered Monday, and was making only 1,321 bbls. a day on June 11. The Kewanee Oil & Gas Co. had nine producers in on its acreage in the southeast quarter of the same section, for which it paid $285,000 and the total yield up to June 11 was 6,832 bbls. The nine wells were averaging 53 bbls. a day each.

The Gypsy Oil Co.'s lease in the northeast quarter of Section 10-27-5, offsetting to the west the unsold Tract No. 118, was batting right along, having produced a total of 658,987 bbls., with a present daily average per well of 172 bbls.

The total amount of oil that has been taken from the Burbank Field since its beginning has reached the impressive figure of 77,440,350 bbls., compared with 65,627,969 bbls. on February 20 of this year. Several leases in the older part of the field have climbed into the million-barrel class in that time.

One of the features of the coming sale will be the offering, at 1.30 p. m., according to the announcement, of 3,520 acres in one tract, located in the Chilocco school reserve. Full information concerning this acreage can be obtained from the superintendent of the Indian School at Chilocco, Okla.

GROSS PRODUCTION OF THE BURBANK FIELD, OSAGE AND KAY COUNTIES, FROM ITS BEGINNING TO JUNE 11, 1924

Carter Oil Co.:	No. Wells	Bonus	Production
NW 12-26-5, November, 1922	2	$500,000	4,791
SE 5-26-6, February, 1921	16	[illegible]	1,062,688
SE 8-26-6, March, 1922	16	351,000	581,857
NE 8-26-6, November, 1921	16	300,000	591,811
NE 9-26-6, November, 1920	10	500	484,772
NW 9-26-6, September, 1920	6	3,600	447,361
SW 9-26-6, January, 1921	12	3,000	802,851
SE 9-26-6, February, 1921	16	3,000	651,467
NW 16-26-6, December, 1920	16	5,400	693,973

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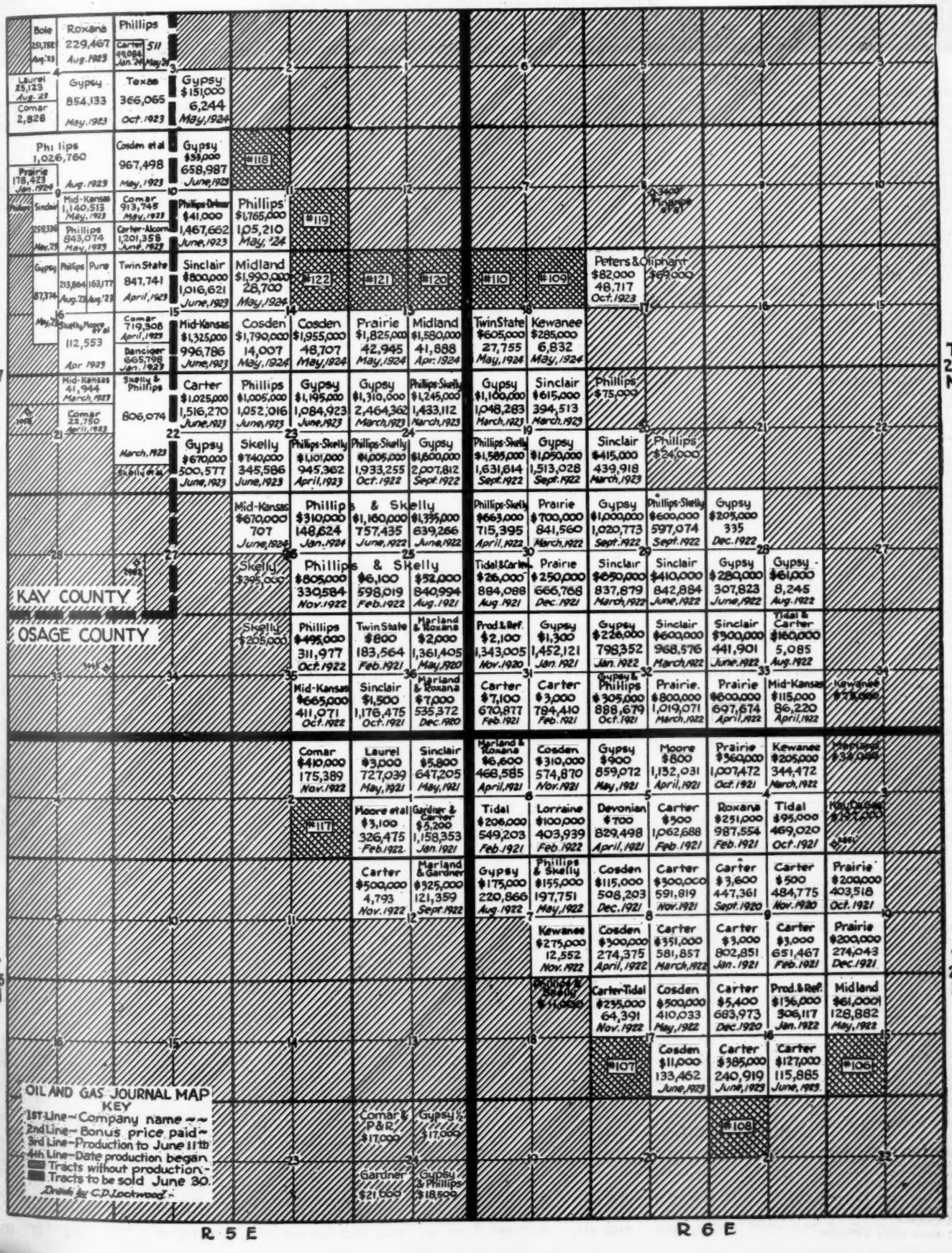
Even out in the heart of the Burbank Field you can't get away from the radio. The enclosed rigs belong to the Midland Oil Co., but the Phillips Petroleum Co.'s office force is responsible for the aerial attached to the pole at the right. The latter company's tank farm is located on this lease. Note the open air filling station to the right.

The above photograph was taken from a hill overlooking one of the Cosden Oil & Gas Co.'s tracts on "millionaire row" facing north and east toward tracts No. 122 and No. 121 which are to be sold June 30. The Phillips Petroleum Co.'s tank farm can be seen in the distance, and to the north, on the hill which appears on the left of the picture between the two telephone poles, is the Midland Oil Co.'s $1,990,000 tract. The producing area of the Burbank Field covers nearly every kind of topography from rugged wooded hills and valleys to flat, barren prairies.

Burbank Tracts With Bonus Prices, Production, Ownership



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	June 24		June 17		June 10	
50-52 450 end point (Naphtha)	.08¼	.08¾	.08¼	.08½	.08¾	.09
56-58 450 end point	.08¼	.08¾	.08¼	.08½	.08¾	.09
58-60 437 end point (New Navy)	.09	.09½	.08½	.08¾	.09	.09¼
60-62 400 end point	.09¾	.10	.09¾	.10	.10¼	.10½
64-66 375 end point	.10¼	.10¾	.10½	.11	.11	.11¼
68-70 360 end point	.11¼	.11½	.11½	.11¾	.11¾	.12
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.08½	.08¾	.08	.08¼	.08½	.08¾
56-58 450 end point	.08¾	.09	.08	.08¼	.08½	.08¾
58-60 437 end point (New Navy)	.09	.09¼	.08¼	.08½	.08¾	.09
60-62 400 end point	.10	.10¼	.09¼	.09½	.09¾	.10
64-66 375 end point	.10½	.11	.09¾	.10¼	.10¼	.10½
68-70 350-365 end point	.11¼	.11½	.11	.11½	.11	.11½
KANSAS—						
58-60 437 end point (New Navy)	.09	.09½	.08½	.08¾	.09	.09¼
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.08	.08¼	.08	.08¼	.08¼	.08½
50-52 440 end point (Naphtha)	.08½	.08¾	.08	.08½	.08½	.08¾
56-58 450 end point	.08½	.09	.08	.08¼	.08¼	.08½
58-60 437 end point (New Navy)	.09	.09¼	.08¼	.08½	.08½	.09
60-62 400 end point	.09¾	.10¼	.09¼	.09½	.09¾	.10
64-66 390 end point	.10½	.10¾	.09¾	.10	.10	.10¼
64-66 375 end point	.10¾	.11	.10	.10¼	.10¼	.10½
68-70 360 end point	.11¼	.11½	.11	.11¼	.11	.11¼
NORTH LOUISIANA—						
56-58 450 end point	.08¾	.09	.08¼	.08½	.09¼	.09½
58-60 437 end point (New Navy)	.09	.09½	.08½	.08¾	.09½	.09¾
60-62 400 end point	.10¼	.10½	.09¾	.10	.10¼	.10¾
64-66 390 end point	.10½	.10¾	.10¼	.10½	.10¾	.11¼
ARKANSAS—						
58-60 450 end point	.08¾	.09	.08½	.08¾	.09¼	.09¾
58-60 437 end point (New Navy)	.09	.09¼	.08¾	.09	.09½	.09¾
64-66 375 end point	.10½	.10¾	.10	.10½	.10¾	.11
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (New Navy)	.11½	.12	.11¼	.11¾	.11¾	.12
PENNSYLVANIA—						
52 Naphtha	.11½		.11½		.11½	
54 Naphtha	.12		.12		.12	
56 Gasoline	.12		.12		.12	
58 Gasoline	.12¼		.12¼		.12¼	
60 Gasoline	.12¾		.12¾		.12¾	
62 Gasoline	.13½		.13½		.13½	
64 Gasoline	.14¼		.14¼		.14¼	
66 Gasoline	.15		.15		.15	
68-70 Gasoline	.16¼		.16¼		.16¼	
CALIFORNIA—						
54-56 437 end point (New Navy)	.10½	.11½	.10½	.11½	.10½	.11½

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	June 24		June 17		June 10	
Grade A, 72-78, under 375 e.p., rec. 90%	.06¾	.07	.06¾	.07	.07¼	.07½
Grade B, 76-82, 375 end point, rec. 85%	.06¼	.06½	.06¼	.06½	.07	.07¼
Grade C, 80-88, 350 end point, rec. 78%	.06	.06¼	.06	.06¼	.06¼	.06½
OKLAHOMA (Group 3)—						
Grade A, 72-78, under 375 e.p., rec. 90%	.07	.07¼	.06¼	.06½	.06½	.06¾
Grade B, 76-82, 375 end point, rec. 85%	.06½	.06¾	.06	.06¼	.06¼	.06½
Grade C, 80-88, 350 end point, rec. 78%	.06¼	.06½	.05¾	.06	.06	.06¼
Grade D, 88-92, 350 end point	.06	.06¼	.05½	.05¾	.06	.06¼
NORTH TEXAS—						
Grade A, 72-78, under 375 e.p., rec. 90%	.06¾	.07	.06	.06¼	.06¼	.06½
Grade B, 76-82, 375 end point, rec. 85%	.06¼	.06½	.05¾	.06	.06	.06¼
Grade C, 80-88, 350 end point, rec. 78%	.05¾	.06¼	.05½	.05¾	.05¾	.06
NORTH LOUISIANA—						
Grade B, 72-78, under 375 e.p., rec. 90%	.06¼	.06½	.06¼	.06½	.06½	.06¾
Grade C, 76-82, 375 end point, rec. 85%	.06	.06¼	.05¾	.06	.06	.06¼
CALIFORNIA—						
68-80 380-410 end point absorption	.10	.11	.10	.11	.10	.11
78-84 350 end point compression	.10		.10		.10	

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	June 24		June 17		June 10	
58-62 437 end point	.08¼	.08½	.08¼	.08½	.08¾	.09
60-62 450 end point	.08¼	.08½	.08¼	.08½	.08¾	.09
64-66 450 end point	.08¼	.08½	.08¼	.08¾	.08¾	.09
OKLAHOMA (Group 3)—						
60-62 450 end point	.08¼	.08½	.08	.08¼	.08¼	.08¾
64-66 437 end point	.08¼	.08½	.08	.08¼	.08¼	.08¾
68-70 430-435 end point	.08	.08¼	.07¾	.08	.08¼	.08¾
NORTH TEXAS—						
58-62 440 end point	.08¼	.08½	.07¾	.08	.08¼	.08½
58-60 450 end point	.08¼	.08½	.07¾	.08	.08¼	.08½
PENNSYLVANIA—						
*60-62	.12		.12		.12½	
*64-66	.12		.12		.12½	
*66-68	.12		.12		.12½	
*68-70	.12		.12		.12½	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	June 24		June 17		June 10	
42-43 water white Kerosene	.04⅛	.04⅜	.04⅛	.04⅜	.04⅛	.04⅜
42-44 water white Kerosene	.04⅜	.04⅝	.04½	.04⅝	.04⅜	.04⅝
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
42-44 water white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
KANSAS—						
41-43 water white Kerosene	.04¼	.04⅜	.04¼	.04⅜	.04⅜	.04⅝
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04	.04¼	.04	.04¼	.04¼	.04⅜
42-44 water white Kerosene	.04¼	.04½	.04⅜	.04⅝	.04½	.04⅝
41-43 prime white Kerosene	.03⅞	.04	.03⅞	.04	.04	.04⅛
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07¼		.07¼		.07½	
NORTH TEXAS—						
41-43 water white Kerosene	.03¾	.04	.03¾	.04	.04	.04⅛
41-43 prime white Kerosene	.03⅝	.03¾	.03⅝	.03¾	.03¾	.04
40-42 prime white Kerosene	.03⅝	.03¾	.03⅝	.03¾	.03¾	.04
42-44 water white Kerosene	.04⅛	.04¼	.04⅛	.04¼	.04⅜	.04⅝
ARKANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04¾	.05
42-44 water white Kerosene	.04¾	.05	.04¾	.05	.05	.05⅛
PENNSYLVANIA—						
43 Kerosene prime white	.05¾		.05¾		.06	
45 Kerosene water white	.06		.06		.06¼	
46 Kerosene water white	.06½		.06½		.06¾	
47 Kerosene water white	.07		.07		.07	
36 Miners' Neutral	.06½		.06½		.06½	
34 Neutral	.06½		.06½		.06½	
34 Sundebloomed Neutral	.08		.08		.08	
300 Mineral Seal	.06½		.06½		.06½	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.09	
Engine distillate, 43-45 445 end point	.08¼	.09	.08¼	.09	.08¼	.09
Engine distillate, 42-44 480 end point	.07½	.08	.07½	.08	.07½	.08

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	June 24		June 17		June 10	
24-26 Fuel Oil (sellers' cars, Group 3)	.77½	.82½	.75	.80	.75	.80
22-24 (El Dorado)	.77½	.82½	.75	.80	.75	.80
18-20 (Smackover)	.75	.80	.75	.80	.85	.87½
32-36 Gas Oil	.02½	.02¾	.02½	.02¾	.02⅝	.02⅞
38-40 Straw distillate	.03¼	.03½	.03¼	.03½	.03½	.03¾
KANSAS—						
24-26 Fuel Oil	.95	1.00	.90	.95	.95	1.00
32-36 Gas Oil	.02¾	.03	.02⅝	.02⅞	.02⅝	.02⅞
38-40 Distillate	.03¼	.03½	.03¼	.03½	.03¾	.03⅞
OKLAHOMA (Group 3)—						
22-26 Fuel Oil (sellers' cars)	.80	.85	.75	.80	.72½	.77½
24-26 Fuel Oil (buyers' cars)	.80	.85	.75	.80	.72½	.77½
24-26 Fuel Oil (sellers' cars)	.80	.85	.77½	.82½	.75	.80
28-30 Fuel Oil (sellers' cars)	.90	.95	.85	.90	.87½	.92½
32-36 Gas Oil	.02¾	.02⅞	.02⅝	.02¾	.02½	.02⅝
38-40 Straw distillate	.03⅛	.03¼	.03⅛	.03¼	.03¼	.03⅜
NORTH TEXAS—						
24-26 Fuel Oil	.80	.85	.77½	.82½	.77½	.82½
26-30 Fuel Oil	.90	.95	.85	.90	.85	.90
32-36 Gas Oil	.02⅝	.02¾	.02½	.02⅝	.02½	.02⅝
36-38 Gas Oil	.02⅞	.03	.02⅝	.02⅞	.02⅝	.02⅞
38-40 Straw distillate	.03⅛	.03¼	.03⅛	.03¼	.03¼	.03⅜
NORTH LOUISIANA—						
20-22 Fuel Oil	.85	.90	.85	.90	.87½	.90
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03	.03⅛
38-40 light Straw distillate	.03¼	.03½	.03¼	.03½	.03¼	.03⅜
ARKANSAS—						
38-40 Distillate	.03⅛	.03¼	.03⅛	.03¼	.03¼	.03⅜
32-36 Gas Oil	.03	.03¼	.03	.03⅛	.03	.03⅛
22-26 Refinery Fuel Oil	.80	.85	.80	.85	.85	.90
GULF COAST (South Texas)—						
Gas Oil	.04	.04½	.04½	.05	.04¾	.05
Fuel Oil	1.60	1.80	1.75	1.90	1.75	1.90
PENNSYLVANIA—						
30-34 Fuel Oil	.05⅛		.05⅛		.05¼	
36-40 Fuel Oil	.05⅝		.05⅝		.05⅝	
CALIFORNIA—						
33-36 Distillate	.03¾	.04¼	.03¾	.04¼	.04	.04½
27-33 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03⅝
15-20 Fuel Oil	1.40		1.40		1.40	

ROAD OILS

CHICAGO DIST. (Based on Group 3)—	June 24		June 17		June 10	
50-60 Asphaltic Content	1.10	1.15	1.10	1.15	1.10	1.15
60-70 Asphaltic Content	1.20	1.30	1.20	1.25	1.15	1.25
OKLAHOMA (Group 3)—						
40-50 Asphaltic Content	1.10	1.15	1.10	1.15	1.10	1.15
50-60 Asphaltic Content	1.15	1.20	1.15	1.20	1.15	1.20
60-70 Asphaltic Content	1.20	1.25	1.20	1.25	1.20	1.25

NEUTRAL OILS

OKLAHOMA (Group 3)—	June 24		June 17		June 10	
Pale Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.04	.04½	.04	.04½	.04	.04½
100 vis., 2 color, 20-25 cold test	.05½	.06	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05	.05½	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.10½	.11	.11	.11½	.11	.11½
150 vis., 4 color, 20-25 cold test	.10	.10½	.10½	.11	.10¾	.11
180 vis., 4 color, 23-28 cold test	.11½	.12	.12½	.13	.12½	.13
180 vis., 3 color, 23-28 cold test	.12½	.13	.13	.13½	.13	.13½
200 vis., 3 color, 23-28 cold test	.13	.13½	.13½	.14	.13½	.14
200 vis., 4 color, 23-28 cold test	.12½	.13	.13	.13½	.13	.13½
220 vis., 3 color, 25-30 cold test	.14½	.15	.15	.15½	.15	.15½
220 vis., 4 color, 25-30 cold test	.14	.14½	.14½	.14¾	.14½	.14¾
240 vis., 3 color, 25-30 cold test	.15½	.16	.16	.16½	.16	.16½
240 vis., 4 color, 25-30 cold test	.15	.15½	.15½	.16	.15½	.16
280 vis., 3 color, 25-30 cold test	.18½	.19	.19	.19½	.19	.19½
280 vis., 4 color, 25-30 cold test	.17½	.18	.18	.18½	.18	.18½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.11½	.12	.12	.12½	.12	.12½

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

180 vis., 6 color, 23-28 cold test	.12¼	.12¾	.12¾	.13¼	.12¾	.13¼
200 vis., 5 color, 23-28 cold test	.12	.12½	.12½	.13	.12½	.13
200 vis., 6 color, 23-28 cold test	.13	.13½	.13¼	.13½	.13¼	.13½
220 vis., 5 color, 25-30 cold test	.13¼	.13½	.13¾	.14¼	.13¾	.14¼
220 vis., 6 color, 25-30 cold test	.14¼	.14¾	.14¾	.15¼	.14¾	.15¼
240 vis., 5 color, 25-30 cold test	.14½	.15	.15	.15½	.15	.15½
240 vis., 6 color, 25-30 cold test	.15¼	.15¾	.15¾	.16	.15¾	.16
280 vis., 5 color, 25-30 cold test	.16½	.17	.17	.17½	.17	.17½
180-190 vis., R. S. green, 40-50 cold test	.08	.08½	.08	.08½	.08½	.09
190-200 dark green, 40-50 cold test	.07	.07½	.07	.07½	.07½	.08
170-190 dark green, 40-50 cold test	.06	.06½	.06	.06½	.06½	.07
600 E filtered	.20	.21	.20	.21	.20	.21
590-600 Bright Stock	.28	.29	.28	.29	.28	.29
600-610 Bright Stock	.32	.34	.32	.34	.32	.34
Waxes:						
124-126 White Crude Scale Wax	.03¾	.03⅞	.03¾	.03⅞	.04	.04⅛
PENNSYLVANIA—						
150, 3 color	.20		.20		.20½	
180, 3 color	.22		.22		.22½	
200, 3 color	.23¾		.23¾		.25	
220, 3 color	.26¾		.26¾		.27½	
600, steam refined	.18¼		.18¼		.18¾	
635, steam refined	.21½		.21½		.22	
650, steam refined	.23		.23		.23½	
600, Pennsylvania flash	.25½		.25½		.26½	
630, Pennsylvania flash	.30		.30		.30	
*550, E filtered	.22		.22		.22	
*600, E filtered	.23½		.23½		.23½	
600, E filtered	.22¼		.22¼		.23¼	
600, D filtered	.29		.29		.29½	
550, E filtered	.20		.20		.20	
550, D filtered	.24		.24		.24	
Pennsylvania Bright Stock	.35½		.35½		.35½	
†122-124 White Crude Scale Wax	.04⅝		.04⅝		.04¾	
*122-124 White Crude Scale Wax	.04½		.04½		.04⅝	

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.07	.08	.07	.08	.07	.08½
No. 2 color, 100 vis., pale oil	.09½	.10½	.10	.11	.10	.11
No. 2 color, 150 vis., pale oil	.12	.13	.12½	.13½	.12½	.13½
No. 3 color, 200 vis., pale oil	.14½	.15½	.14½	.15½	.14½	.15½
No. 3 color, 300 vis., pale oil	.16½	.17½	.16½	.17½	.16	.17½
No. 3½ color, 500 vis., pale oil	.18	.19½	.18½	.20	.18	.19½
No. 3½ color, 750 vis., pale oil	.24½	.25½	.24½	.25½	.24½	.25½
No. 4½ color, 1200 vis., pale oil	.26	.27	.26	.27	.26	.27
No. 4½ color, 2000 vis., pale oil	.31	.32	.31	.32	.31	.32
No. 1½ color, 150 vis., pale, filtered	.20½	.21½	.20½	.21½	.20½	.21½
No. 2 color, 200 vis., pale, filtered	.22½	.23½	.22½	.23½	.22½	.24
No. 3 color, 300 vis., pale, filtered	.26½	.28	.27	.28	.27	.28
No. 3½ color, 500 vis., pale, filtered	.31	.32½	.31	.32½	.31	.32½
No. 3½ color, 750 vis., filtered	.39	.40½	.39	.40½	.39	.40
No. 5 to 6 color, 200 vis., red oil	.13	.14	.13	.14	.13	.14
No. 5 to 6 color, 300 vis., red oil	.14	.15	.14½	.15½	.15	.16
No. 5 to 6 color, 500 vis., red oil	.16	.17½	.16½	.17½	.17	.18½
No. 5 to 6 color, 750 vis., red oil	.21½	.23	.22	.23	.22	.23
CALIFORNIA—						
200 vis., 2½-3 color	.15	.17	.15	.17	.15	.17
300 vis., 3 -4 color	.16	.19	.16	.19	.16	.19
350 vis., 3½-4 color	.17½	.20	.17½	.20	.17½	.20
400 vis., 4 -4½ color	.19	.20	.19	.20	.19	.20
Red Neutrals:						
200 vis., 4½-5 color	.13	.14	.13	.14	.14	.14½
300 vis., 5 -6 color	.14	.17	.14	.17	.15	.17½
400 vis., 5 -6 color	.16	.18	.16	.18	.16	.18
500 vis., 6 -6½ color	.17	.18	.17	.18	.17	.18
600 vis., 6½ plus	.18	.21	.18	.21	.20	.21

NEW YORK DOMESTIC MARKET

Motor Gasoline:	June 24	June 17	June 10
Spot Gasoline, Bayonne	.14½	.14	.14
V. M. P. Naptha, in steel barrels	.19	.19	.19
Lubricating Oil (Industrial) at refinery, Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.45½	.45½	.45
Cylinder, light filtered, in barrels	.39½	.39½	.39½
Cylinder, Bright Stock	.49½	.49½	.49½
Cylinder, steam refined (600)	.31½	.31½	.31½
Black, in bulk	.13	.13	.17½
Bloomless, white, 30-31 gravity, 170 vis.	.45	.45	.50
Bloomless, 885 specific gravity	.17½	.17½	.15½
Red Paraffin:			
170 viscosity	.23	.23	.22
212 viscosity	.25	.25	.25
265 viscosity	.25½	.25½	.24½
295 viscosity	.30	.30	.29
Paraffin, 903 specific gravity	.31	.31	.30
*Fuel Oil:			
Bunker Oil, 14 plus, delivered in barges, bbl.	1.75	1.75	1.75
Diesel Oil, at refinery, gallon	.05½	.05½	.05½
Furnace Oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.06½	.06½	.06½
Wax, fully refined:			
120-122 a.m.p.	.05	.05	.06¼
125-127 a.m.p.	.05¼	.05¼	.06¾
130-132 a.m.p.	.07	.07	.07¼
135-137 a.m.p.	.08½	.08½	.08⅞

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	June 24	June 17	June 10
Motor Gasoline, in cases, gallon	.28.15	.28.15	.28.15
Motor Gasoline, U. S. Navy, spec. gallon	.14	.14	.14
Naphtha, 60° F., 59-61 spec. grav.	.15.28	.15.28	.15.28
Naphtha, 60° F., 63-66 spec. grav.	.17	.17	.17
Naphtha, 60° F., 66-68 spec. grav.	.18.50	.18.50	.18.50
Kerosene:			
Standard white, in bulk, gallon	.06½	.06½	.06½
Standard white, in barrels, gallon	.13½	.13½	.13½
Standard white, in cases, gallon	.16.90	.16.90	.16.90
Water white, in cases, gallon	.07½	.07½	.07½
Water white, in barrels, gallon	.14½	.14½	.14½
Water white, in cases, gallon	.17.90	.17.90	.17.90

LOS ANGELES EXPORT PRICES

	June 24		June 17		June 10	
Kerosene	.04	.04½	.04	.04½	.05	.05½

CRUDE OIL PRICES

June 14.—Standard Oil Co. (Louisiana) posted price of $1 per barrel on Cotton Valley crude. Joseph Seep Purchasing Agency reduced all grades Pennsylvania oil 50 cents; Cabell, Somerset medium and Somerset light were reduced 25 cents; Ragland crude was reduced 10 cents. Paragon Development Co. reduced Cumberland and Monroe County (Kentucky) crude 25 cents.

June 16.—Joseph Seep Purchasing Agency reduced Corning crude 25 cents. Indian Refining Co. reduced three grades of western Kentucky crude 30 cents. Ohio Oil Co. reduced Wooster crude 15 cents.

Arkansas and North Louisiana

Caddo, 38° and above	$1.85
35° to 37.9°	1.75
32° to 34.9°	1.65
Below 32°	1.50
Homer, 35° and above	1.85
33° to 34.9°	1.75
31° to 32.9°	1.65
Below 31°	1.50
Haynesville, 33° and above	1.75
Below 33°	1.65
El Dorado, 33° and above	1.85
Below 33°	1.75
Bull Bayou, 38° and above	1.80
35° to 37.9°	1.65
32° to 34.9°	1.50
Cotton Valley	1.00
De Soto	1.85
Crichton	1.65
Bellevue	1.75
Smackover, 26° and above	1.20
25° to 25.9°	1.05
24° to 24.9°	.95
Below 24°	.85
*Stephens, Ark.:	
Below 23°	1.00
23° to 25.9°	1.20
26° to 27.9°	1.35
28° to 31°	1.40

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek (Wyo.)	$1.70
Salt Creek	1.60
Big Muddy	1.50
Mule Creek	1.10
Grass Creek (light)	1.95
Elk Basin	1.95
Lance Creek	1.90
Osage	1.90
Cat Creek (Mont.)	1.95
Sunburst, (Mont.)	1.05
Lost Soldier	1.28
Greybull and Torchlight	1.90
Hamilton Dome	1.55

Lander based on contracts covering entire production of fields.

Oklahoma, Kansas, North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted below:

Below 30°	$1.25
30° to 32.9°	1.45
33° to 35.9°	1.75
36° to 38.9°	2.00
39° and above	2.25
Magnolia Petroleum Co.:	
Below 28°	.90
28° to 30.9°	1.00
31° to 32.9°	1.10
33° to 35.9°	1.35
36° and above	1.50
Corsicana Light	1.50
Corsicana Heavy	.20
Mexia	1.50
Currie	2.25
Powell	1.75
Thrall	1.00
Humble Oil & Refining Co.:	
Corsicana Light	2.00
Mexia	2.00
Powell	2.00

Gulf Coast

Grade "A"	$2.00
Grade "B"	1.70
Luling	.75
Laredo	.75
Milam County	1.35
Rockdale-Minerva (Milam County)	1.60
Above 39° gravity	1.80
Calliham (Live Oak-McMullen)	1.68½

California

14° to 14.9°	$1.00
20° to 20.9°	1.01
21° to 21.9°	1.02
22° to 22.9°	1.03
23° to 23.9°	1.05
24° to 24.9°	1.07
25° to 25.9°	1.10
26° to 26.9°	1.13
27° to 27.9°	1.16
28° to 28.9°	1.19
29° to 29.9°	1.22
30° to 30.9°	1.25
31° to 31.9°	1.28
32° to 32.9°	1.31
33° to 33.9°	1.34
34° to 34.9°	1.37
35° gravity and above	1.40

Eastern States

Penna Grade Oil in New York Transit Lines	$3.75
Bradford District Oil in National Transit Lines	3.75
Penna Grade Oil in National Transit Lines	3.25
Penna Grade Oil in Southwest Pa. Pipe Line Lines	3.25
Penna Grade Oil in Eureka Pipe Line Lines	3.25
Penna Grade Oil in Buckeye Pipe Line Lines	3.25
Cabell Grade Oil in Eureka Pipe Line Lines	1.70
Corning Grade Oil in Buckeye Pipe Line Lines	1.90
Somerset Medium Oil in Cumberland Pipe Line Lines	1.80
Somerset Light Oil in Cumberland Pipe Line Lines	2.00
Ragland Grade Oil in Cumberland Pipe Line Lines	1.00
Lima	2.28
Wooster	2.00
Illinois	2.07
Indiana	2.08
Princeton	2.07
Plymouth	1.45
Waterloo	1.55
†Oil Springs, Canada	2.75
†Petrolia, Canada	2.68
*West Kentucky, 36° and above	1.75
*Western Kentucky, 33° to 35.9°	1.65
*Western Kentucky, 32.9° and below	1.55
Cumberland and Monroe Counties, (Ky.), (Paragon Dev. Co.)	2.00

†Plus Government bounty of 52½c.

*Prices for Warren, Allen, Hancock and Ohio Counties by Indiana Refining Co. Prices for Warren and Simpson Counties by Paragon Development Co.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$1.40
†Panuco (f.o.b. Mexican ports)	1.15
Tuxpam (New York)	1.97
Panuco (New York)	1.57

*Plus 31.92c tax. †Plus 17.40c tax. Prices based on contracts.

41-43 water white Kerosene ..... .04¼ .04⅞ .04¼ .04⅞ .04⅞ .04⅞ 150 Flash, 8 Color, 20-25 Cold Test 12½

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MEMBER AUDIT BUREAU OF CIRCULATIONS

LET OIL MEN STAND UP

What has been the chief difficulty encountered in the efforts to secure agreement upon the curtailment of operations until the overhanging surplus is reduced?

The fact that under the law oil in the ground is not property as coal or iron ore is; that it is not property until it is reduced to possession.

It is anybody's oil until somebody brings it to the surface. That is the meaning, of course, of offsets, familiar to oil men but not to the general public.

It is not, therefore, a simple question of shutting down a well and finding the oil still there when drilling is resumed. It is complicated by the fear that a nearby well, not shut down, may get the oil before operations are resumed.

And it works both ways and every way. No one, in a field competitively drilled, can hope to escape the problem unless all agree. And upon the actual moment to shut down there may arise contradictions just as infinitely complex.

One operator may be in a position where he has everything to gain by continuing. A shut down may be for him a positive hardship. There may be more than one in this position. The problem is how to reconcile all these conflicting interests with the general good.

Sometimes, but rarely, the danger in overproduction, as last year, is so overwhelming and imminent that it overshadows any minor or personal advantage, and a policy of curtailment is reached by mutual agreement.

But it is usually a struggle to get any sort of a compromise on a curtailment program where there are a number of operators with interests at stake in differing degree.

To overcome this problem many suggestions have been offered from time to time. Government or State regulation has been urged as a last resort. Unless the industry itself finds a remedy, that suggestion of Federal or State restriction is bound to grow since, some day, the waste of our petroleum resources by overproduction, if unchecked, is bound to become a political topic.

The question before the industry is whether the men in the oil business will get together and frame their own remedy or wait until the politcians take the business out of their hands and force some ruinous restriction upon them.

There should be but one answer to that question. The oil industry should act before the politicians have a chance to interfere.

Congress is out of the way until the first Monday of next December. There is today urgent need for some plan to check the overproduction that is demoralizing the oil business very much as California and Powell demoralized it last year.

These two conditions urge the present as the moment for action. Oil men for the time being have the field to themselves and should demonstrate their ability to deal with their own problems.

If a remedy is to be found it must be framed by the practical men of the industry themselves. It cannot be looked for from politicians or State or Federal officeholders who know nothing of the oil industry. If it is left for them to handle the situation will be only the more muddled. The forcing of the sale of Osage leases at this time is an example of governmental inability to understand practical conditions in the oil business.

Oil men in California last year and in the Mid-Continent this year have shown their readiness to grapple with this problem locally. No effort has been attempted on a broader or national scale presumably in fear that it might be construed in violation of the law.

But if the law prevents the obvious and sensible remedy for the ills of the industry and at the same time thereby causes a waste of the nation's most essential and irreplaceable natural resource, is it not the privilege and duty of the industry to begin a campaign of public education for the amendment of that law?

That oil is not property until brought to the surface differentiates it from every other business and entitles it to a different standing. Regulatory laws designed to prevent restraint of trade that might work in other lines must be interpreted by the rule of reason in their application to oil which has its own peculiar problems.

The facts set forth in this article could be so presented to the public and to Congress that the oil industry could demand a hearing and the necessary freedom to take such steps as are needed to save the industry and to conserve the oil supply of the nation, so indispensable to industry and so vital in case of war.

Why not have the leaders in the industry, representing the Standard and the non-Standard groups, get together in common council and formulate a practical plan for the prevention of overdrilling and waste? It is being done on a local scale here in Oklahoma today. It could be done on a national scale if this bugaboo of the anti-trust law could be removed by an appeal to the intelligence of the people.

The Government and nation trusted to such a council of practical oil men to maintain the supply needed during the war, a supply so generous that it has been credited with winning the struggle and conspicuous for lack of any taint of profiteering either upon the Government or upon the public.

If the oil men will agree upon a remedy for overproduction and waste, showing the necessity for it and the fact that it is in the interest of the consumers and the nation, no less than the industry, the fairmindedness and good sense of the American people will not be appealed to in vain.

But the time to act is now. The opportunity may be gone if action is postponed until the agitators for Government control resume business with the return of Congress.

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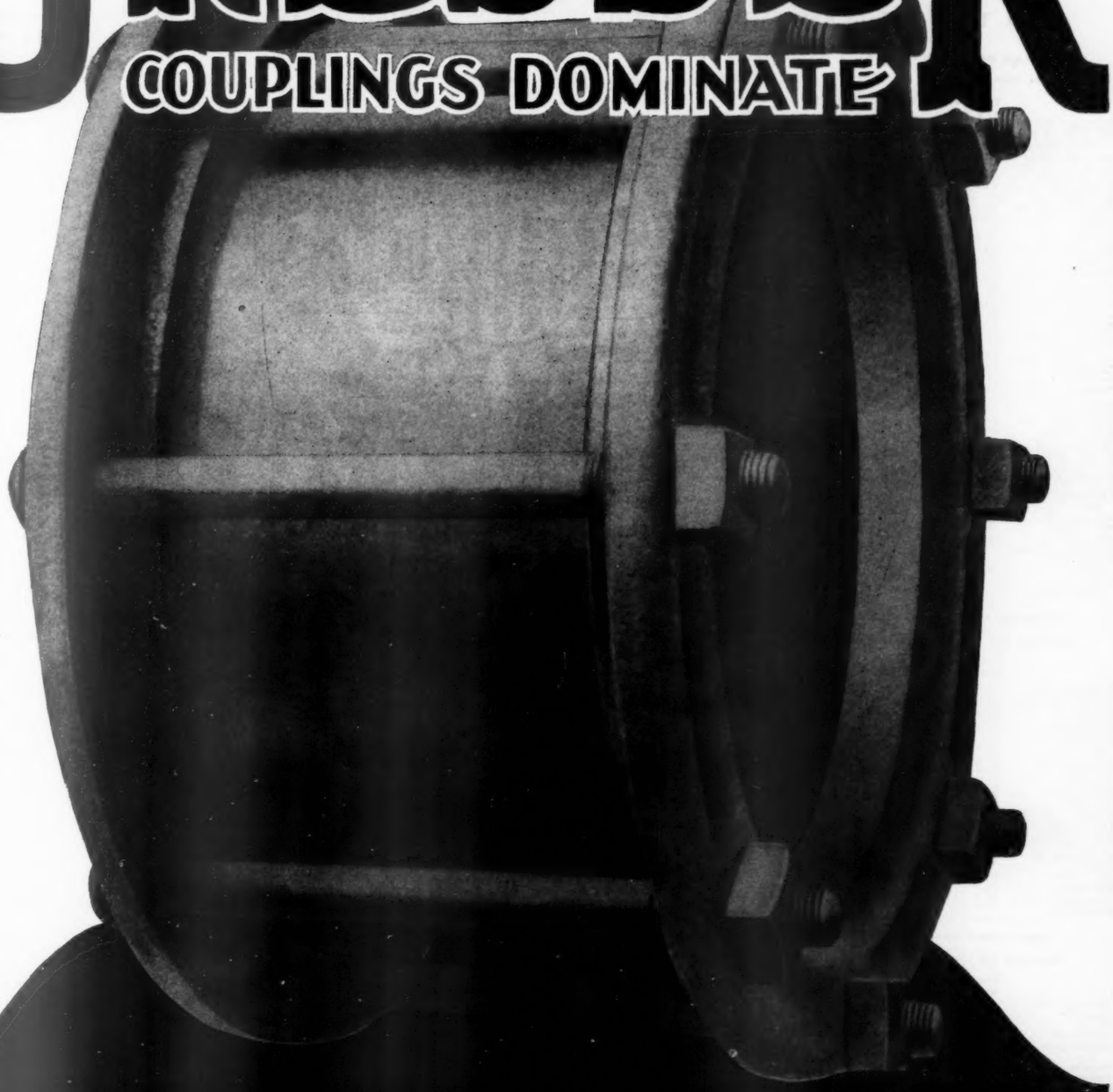

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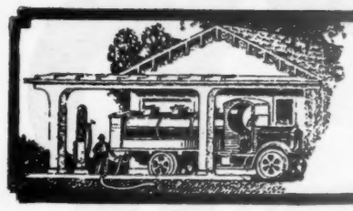


TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, June 24

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Chicago district	18.0	...	19.0	12.0
100 gals. or more	15.25	...	....	....

Tank wagon prices on April 10, 1922, g. up 1¼c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 2c; Jan. 12, 1924, g. up 2c; k. up 1c; Feb. 5, g. up 2c, k. 1c.

Decatur, Ill. ..	17.2	...	19.2	12.5
East St. Louis..	17.1	...	19.35	11.6
Joliet	18.4	...	20.4	12.7
Peoria	18.2	...	20.2	12.5
Quincy	18.2	...	20.2	12.3
Davenport, Ia. ..	15.5	...	20.5	12.9
Des Moines ...	16.0	...	18.5	12.9
Keokuk	18.5	...	20.5	12.9
Sioux City	16.0	...	18.0	12.5
Duluth, Minn....	19.2	...	21.2	13.6
Minneapolis	13.0	...	18.0	13.6
La Cross, Wis..	19.2	...	21.2	13.4
Milwaukee	16.1	...	19.1	12.3
Madison	18.3	...	20.3	13.5
Detroit, Mich...	15.8	...	20.8	13.2
Grand Rapids ..	18.7	...	20.7	13.1
Saginaw	18.9	...	20.9	13.3
Evansville, Ind..	20.0	2.0	22.0	12.5
Fort Wayne ...	20.4	2.0	22.4	12.9
Indianapolis ...	20.2	2.0	22.2	12.7
South Bend ...	20.4	2.0	22.4	12.9
Fargo, N. D....	13.8	1.0	20.8	15.6
Huron, S. D. ..	22.0	2.0	24.0	14.1
Sioux Falls ...	18.0	2.0	20.0	13.6
*Kansas City Mo.	15.9	1.0	20.9	11.3
Springfield	17.8	...	19.8	12.3
*St. Louis	15.6	0.5	18.9	12.0
*St. Joseph	18.0	0.5	20.0	11.9
Wichita, Kans..	17.8	...	19.8	11.8
Bartlesville, Okla.	19.4	2.5	21.4	10.9

*City tax.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Newark, N. J...	19.5	...	....	14.0
Atlantic City ..	19.5	...	....	14.0
Annapolis, Md..	21.0	2.0	24.0	13.5
Baltimore	21.0	2.0	24.0	13.5
Cumberland	21.0	2.0	24.0	13.5
Washington, D. C.	21.0	2.0	25.0	13.5
Norfolk, Va. ...	22.0	3.0	24.0	14.0
Petersburg	22.0	3.0	24.0	14.5
Danville	22.0	3.0	24.0	14.5
Richmond	22.0	3.0	24.0	14.5
Roanoke	22.0	3.0	24.0	14.5
Keyser, W. Va..	21.0	2.0	....	14.5
Charleston	21.0	2.0	....	14.5
Parkersburg ...	21.0	2.0	....	13.0
Wheeling	21.0	2.0	....	14.5
Charlotte, N. C.	22.0	3.0	....	14.5
Hickory	22.0	3.0	....	14.5
Mt. Airy	22.0	3.0	....	14.5
Salisbury	22.0	3.0	....	14.5
Charleston, S. C.	22.0	3.0	....	13.5
Columbia	22.0	3.0	24.0	14.5

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Atlanta, Ga. ...	18.0	3.0	22.0	14.0
Augusta	20.0	3.0	22 0	14.5
Macon	20.0	3.0	22.0	15.5
Savannah	18.0	3.0	20.0	14.0
Birmingtom, Ala.	18.0	2.0	20.0	15.5
Mobile	17.0	2.0	19.0	13.5
*Montgomery ..	19.0	3.0	21.0	16.5
Clarksdale, Miss.	18.0	3.0	20.0	14 0
Jackson	18.0	3.0	20.0	10.0
Natchez	17.5	3.0	19.5	13.5
Vicksburg	17.5	3.0	19.5	13.5
Jacksonville, Fla.	18.0	3.0	20.0	14.0
Miami	20.0	3.0	22.0	15.5
Pensacola	18.0	3.0	20.0	14.5
Tampa	18.0	3.0	20.0	14.0
Lexington	23.0	3.0	25.0	15.0
Covington, Ky...	23.0	3.0	25.0	16.0
Louisville	22.0	3.0	24.0	14.0

*In addition to State tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ⅛ cent on kerosene.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
San Francisco..	17.0	2.0	20.0	15.5
Los Angeles ...	16.0	2.0	19.0	15.5
Fresno	17.5	2.0	20.5	17.5
Reno, Nev.	20.5	2.0	23.5	19.0
Portland, Ore...	19.0	3.0	22.0	16.5
Seattle, Wash..	18.0	2.0	21.0	16.5
Tacoma	18.0	3.0	21.0	16.5
Spokane	22.0	2.0	25.0	20.5
Phoenix, Ariz...	23.0	3.0	26.0	21.5

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Denver, Colo. ..	19.0	2.0	21.0	14.5
Glenwood Spgs..	23.0	2.0	....	18.5
Pueblo	19.0	2.0	21.0	14.5
Billings, Mont..	21.5	2.0	23.5	14.5
Butte	23.0	2.0	25.0	15 0
Great Falls	23.0	2.0	25.0	16 0
Helena	23.0	2.0	25.0	16 0
Miles City	22.5	2.0	24.5	15 5
Boise, Idaho ..	24.5	2.0	26.5	20.0
Salt Lake, Utah	24.0	2.5	26.0	17.5
Ogden	24.0	2.5	26.0	17.5
Basin, Wyo. ...	22.0	1.0	....	15.0
Casper	19.0	1.0	20.0	13.0
Cheyenne	19.5	1.0	21.5	15.0
Cody	21.0	1.0	....	16.0
Lander	20.0	1.0	....	15.0
Albuquerque, N. M.	22.0	1.0	24.0	16.5

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Albany, N. Y...	20.0	...	22.5	14.0
*New York	20.0	...	23.0	14.0
Buffalo	16.5	...	19.5	14.0
Rochester	17.0	...	21.0	13.0
Syracuse	19.5	...	22.0	12.0
Boston, Mass...	18.0	...	21.0	14.0
Providence, R. I.	20.0	...	23.5	14.0
Augusta, Me. ..	20.0	1.0	22.5	14.0
Manchester, N. H.	20.0	2.0	23.5	14.0
Burlington, Vt..	20.0	1.0	22.5	14.0

*Price in steel barrels.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
All Ohio Points.	19.0	...	21.0	15.0

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Dallas, Tex. ...	16.0	1.0	20.0	10.0
Fort Worth	15.0	1.0	19.0	11.0
Houston	17.0	1.0	21.0	12.0
San Antonio ..	16.0	1.0	19.0	10.0
El Paso	18.0	1.0	22.0	13.0
Muskogee, Okla.	16.0	2.5	21.0	11.0
Oklahoma City.	16.5	2.5	21.5	11.0
Tulsa	16.0	2.5	21.0	11.0
Ft. Smith, Ark..	18.0	4.0	20.0	13.0
Little Rock ...	22.0	4.0	26.0	18.0
Texarkana	21.0	4.0	24.0	12.0

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
*Pittsburgh, Pa..	20.0	...	25.0	14.0
*Philadelphia ..	20.0	...	25.0	14.0
*Scranton	20.0	...	25.0	14.0
*Allentown	20.0	...	25.0	14.0
*Altoona	20.0	...	25.0	14.0
Dover, Del.	22.0	2.0	25.0	14.0
Wilmington	23.0	2.0	25.0	14.0
Providence, R. I.	20.0	...	23.0	14.0
Springfield, Mass	20.0	...	23.0	14.0
Worcester	20.0	...	23.0	14.0
Boston	20.0	...	23.0	14.0
Hartford, Conn..	21.0	1.0	24.0	14.0
New Haven	21.0	1.0	24.0	14.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
New Orleans, La.	17.5	1.0	20.5	9.0
Alexandria	18.5	1.0	21.5	13.0
Baton Rouge ...	17.0	1.0	20.0	11.5
Lake Charles ..	18.5	1.0	21.5	13.0
Shreveport	18.5	1.0	21.5	13.0
Memphis, Tenn..	20.0	2.0	22.0	14.0
Chattanooga ...	20.5	2.0	22.5	14.5
Knoxville	21.5	2.0	23.5	15.0
Nashville	19.5	2.0	20.5	13.5
Bristol	22.0	2.0	24.0	15.5
Little Rock, Ark	21.0	4.0	23.0	13.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Incldg tax	Gasoline: Service of station	Kero. Tank wagon
Omaha	13.0	...	15.0	12.5
Crawford	19.00	...	.....	13.25
McCook	19.75	...	21.75	14.0
Norfolk	18.75	...	20.75	13.0
North Platte ...	19.75	...	21.75	13.75
Scotts Bluff ...	19.25	...	21.25	13.25

TANK WAGON CHANGES

June 18.—Standard Oil Co. (Nebraska) reduced gasoline tank wagon and service station prices 2 cents at Omaha.

June 19.—Magnolia Petroleum Co. reduced gasoline tank wagon and service station prices 2.5 cents at Tulsa and Muskogee. Magnolia reduced kerosene tank wagon price 1 cent at Muskogee.

June 20.—Magnolia Petroleum Co. reduced kerosene tank wagon price 1 cent at Texarkana.

June 23.—Standard Oil Co. (Kentucky) reduced gasoline tank wagon and service station prices 2 cents in Mississippi, Alabama, Georgia and Florida. Standard Oil Co. (Ohio) reduced gasoline tank wagon and service station prices 1 cent in entire territory.

Scattered reductions were made in the Standard Oil Co. (Indiana) territory during the past week, affecting gasoline tank wagon and service station prices. No announcement of changes had been made by the Standard at its Chicago offices before Tuesday.

GASOLINE PRICES ARE HIGHER IN GROUP

(Continued from Page 22)

goes by the Shell-Roxana interests started the improvement. Since then all classes of buyers have been in the market. This includes gas companies, industrial users and refiners who want gas oil for their cracking plants. The Atlantic Refining Co. is one of the large buyers in the market and has purchased approximately 2,000,000 gallons in Oklahoma and North Texas. The buying resulted in an advance to a new low price of 2¾ cents with some material moving at 2⅞ cents. With a heavy gasoline consumption under way, gas oil is also expected to continue strong, due both to increased demand and a more limited supply brought about by refiners adjusting their operations to secure a maximum gasoline recovery.

Neutrals and Wax

So many concerns are selling neutrals under the Cosden & Co. prices that adjustments have been necessary in the prices carried elsewhere in this issue. An increased consumption from the automobile trade has not been reflected in the demand from refiners and the market is very unsettled. The few manufacturers in Group 3 are being made aware of South Texas and other outside competition and some plants have adopted the policy of meeting competitive prices whenever it invades their territory. The wax market is unchanged. The Sinclair Refining Co. was the major buyer of wax during the past week.

EMPIRE LEASES TANK CARS

NEW YORK CITY, June 21.—The Empire Refineries, Inc., the principal refining subsidiary of the Cities Service Co., recently leased 75 tank cars to take care of the large movement of gasoline from its plants. These are in addition to the 345 cars recently purchased by various subsidiaries of the Cities Service Co., and make a total of over 2,800 tank cars in the service of the Empire, Cities Service and Crew Levick Companies.

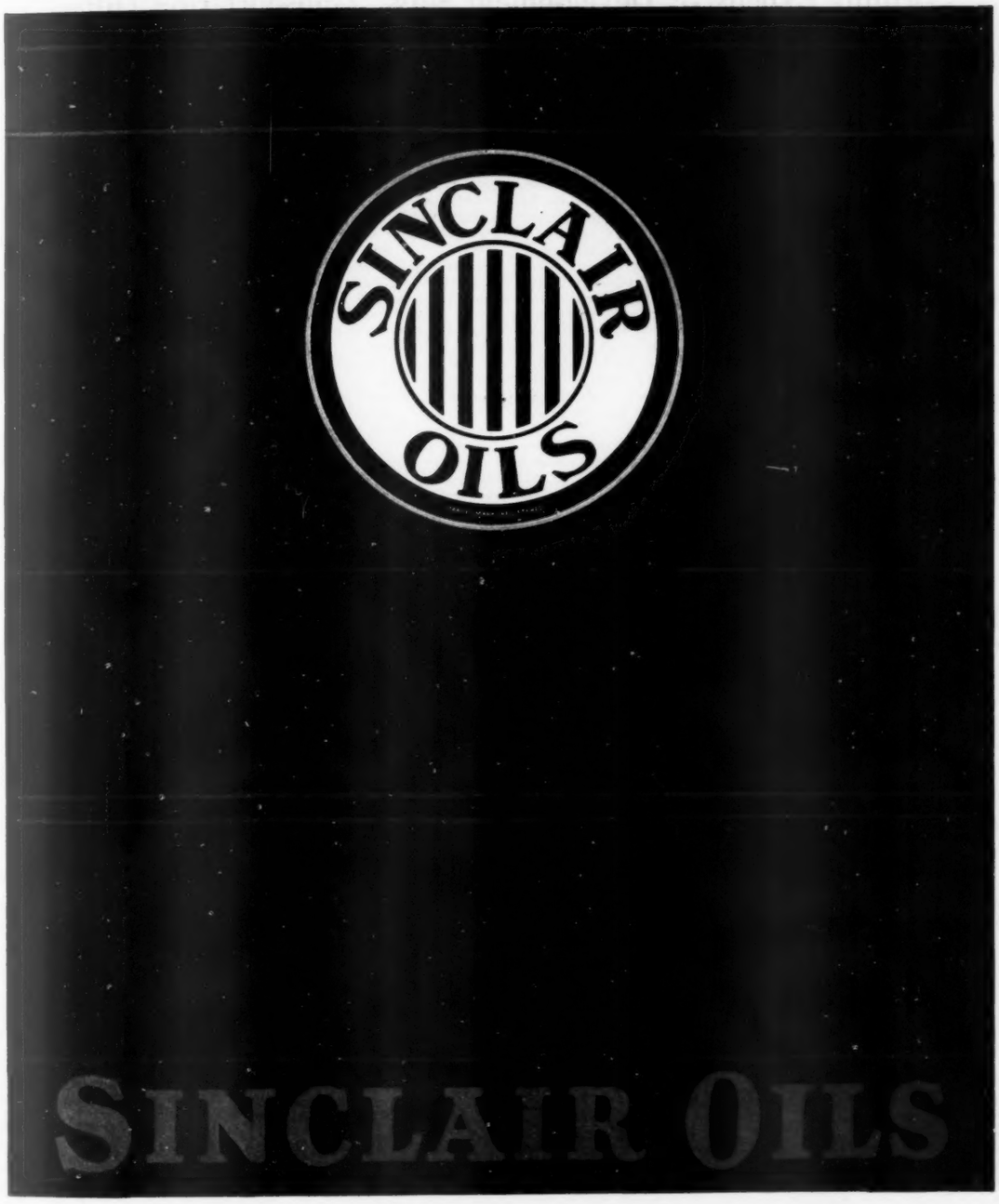
MID-CONTINENT REFINERY OPERATIONS FOR WEEK ENDING JUNE 14

The 140 inland refineries reporting to the Western Petroleum Refiners Association charged 87,287 barrels more crude to their stills during the week ending June 14 than they did during the preceding week, according to the report of the association. During the week in review there was a decrease of 15,904 barrels in semi-refined oils taken from stocks and run to stills, making a total increase in runs of 71,383 barrels for the week, or 4.13 per cent increase in comparison to the runs for the preceding week. The output of gasoline climbed 2,986,933 gallons or 11.85 per cent to a total of 28,186,315 gallons. Shipments increased 21.22 per cent, causing a decrease of 2.86 per cent in stocks, which were reduced 3,993,217 gallons to a total of 135,748,062 gallons. Kerosene output increased only 5,246 gallons or 0.09 per cent to a total of 5,737,631 gallons. Shipments dropped off 14.65 per cent and stocks increased 1,483,154 gallons or 8.47 per cent to a total of 18,986,565 gallons. Gas and fuel oils decreased 83,006 gallons or 0.26 per cent in output to a total of 32,068,153 gallons. Shipments increased 7.80 per cent and stocks dropped off 1,404,495 gallons or 1.44 per cent to a total of 96,325,987 gallons. The six Gulf Coast refineries were charging about the same amount of crude to stills, total for the past week being 300,424 barrels, an increase of 0.53 per cent. Output of gasoline increased 18.31 per cent and stocks increased 3.18 per cent; kerosene output increased 423.23 per cent and stocks increased 5.38 per cent; gas and fuel oils increased 24.71 per cent in output and 6.19 per cent in stocks.

CONSOLIDATED STATEMENT COVERING ALL MID-CONTINENT REFINERIES FOR THE WEEK ENDING 7 A. M., JUNE

	Kansas	Oklahoma	North & C Texas	North Louisiana & Arkansas	Mid-Cont. Total	June 7, '24	May 17, '24	Apr. 18, '24
Number of refineries reporting	26	62	42	10	140	140	138	138
Daily capacity, barrels	86,600	265,700	105,550	25,000	482,850	482,850	481,850	481,850
Combined operations during week:								
Materials to stills, barrels:								
Crude, item A	294,947	864,207	368,448	84,117	1,611,719	1,524,432	1,521,131	1,546,679
Other oils (see note), tem B	33,713	98,373	39,048	14,865	185,999	201,903	156,763	187,350
Total	328,660	962,580	407,496	98,982	1,797,718	1,726,335	1,677,894	1,734,029
Output, gallons:								
Gasoline, item C	5,189,407	15,982,535	6,097,760	916,613	28,186,315	25,199,382	24,142,816	23,227,919
Kerosene, item D	1,288,617	2,812,877	1,347,613	288,524	5,737,631	5,732,385	5,066,476	6,319,349
Gas and fuel oil, item E	5,886,695	16,063,660	8,237,024	1,880,874	32,068,153	32,151,159	29,312,741	26,256,969
Stocks on hand at close of week:								
Materials for stills, barrels:								
Crude, item J	682,623	4,312,351	1,244,391	838,918	7,078,283	7,142,139	7,261,422	7,744,533
Other oils (see note), item K	69,663	1,290,860	134,646	511,244	2,006,413	1,984,362	1,983,703	2,422,973
Finished products, gallons:								
Gasoline, item L	15,515,036	104,840,872	13,711,183	1,680,971	135,748,062	139,741,209	145,127,161	122,964,309
Kerosene, item M	2,672,906	10,669,361	5,806,948	137,330	18,986,566	17,505,411	15,959,257	23,216,702
Gas and fuel oil, item N	7,216,341	68,469,260	17,145,654	3,494,732	96,325,987	97,730,482	94,834,544	110,626,300

Note—Other oils includes all oils other than crude which are either purchased or withdrawn from stocks and run to stills during the week. The total of items A and B is, therefore, the net quantity of materials consumed by the reporting refineries in producing the quantities of products shown as the result of the operations of the refineries during the week. Item K includes all stocks of oils, other than crude held for further refining.



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Colorado Oil Not to Be Disturbing

Drilling Expensive, Development Slow, Transportation Difficult. Production Probably Will Be Needed When Available

By L. M. Fanning

The Prairie Oil & Gas Co.'s agreement with The Texas Co. to build a pipe line from the Moffat Field in Colorado to a connection with the Producers & Refiners pipe line at Parco Wyo., on the Union Pacific, providing the production of the Texas-Transcontinental well and the others now drilling show sufficient production to warrant the line, has served to put a decidedly important complexion on the recent developments in Colorado.

As a result of the completion by the Union Oil Co. of California in November, 1923, of a large gas well on Wellington Dome, Larimer County, on the eastern slope of the Rockies 78 miles north of Denver, and the subsequent completion by the Texas Production Co. in January of this year of a well which had an initial production of 4,580 bbls. of oil per day in northwestern Colorado, west of the Continental Divide, this discovery being now known as the Moffat Pool, the eyes of the oil industry were already focused upon Colorado. The bringing in of these wells, both of which are located on geological structures, has caused a rush of operators to that territory and will result in much exploratory work there during the coming summer.

Not Alarming Factor

The questions naturally arising are: What will be the result of this activity? When will the effect of the expected new production be felt? And will it be of such magnitude as to disturb the equilibrium of the industry?

It is believed that while Colorado will produce considerable oil, it will have no disturbing influence on the industry. Drilling will be expensive and development slow. Discoveries will not mean large production at first. Time will be required in the laying of pipe lines after development has reached a stage to warrant them. And, finally, the territory is so isolated that its production will not be available for general consumption, at least for several years. The chances are that it will be greatly needed long before it is available.

Colorado has produced to date approximately 12,000,000 bbls. of oil, the peak year occurring in 1892, when 824,000 bbls. were produced. The gross production last year was less than 100,000 bbls. Up to the time of the Wellington discovery all of the production in eastern Colorado had come from the Florence Field, developed in 1887 and the Boulder Field in 1891. The first named of these pools producers from crevices in shale, the second from lenses of sand. Neither is on closed anticlines. The producing horizon is the Pierre shale, approximately equivalent in age to the Shannon sand in Wyoming.

Wellington Well

In contrast with this, the discovery at Wellington is in the Dakota sand, which is the main producing horizon of the Rock River and Lost Soldier Fields in Wyoming. The Wellington well is on a geological structure having apparently about 500 feet of closure and an area of about 2,100 acres. The well reached the Dakota formation at 4,285 feet, at which depth it blew in with an estimated flow of 3,000,000 feet of gas per day. It later increased in volume to 80,000,000 feet with a 1,800-pound rock pressure, and in December, 1923, commenced spraying oil at a rate estimated at 300 bbls. per day. The well was successfully closed in in December and it has been capped ever since.

The Union Oil Co. is developing two other small structures to the south and southwest of the well, but they are not regarded as favorably as the Wellington structure owing to their small areal extent. Similar structures are being developed by the Midwest Refining Co. at Berthoud, located 40 miles north of Denver, and the Ohio Oil Co. near Boulder, 32 miles northwest of Denver. These five domes are the most favorable prospects in northeastern Colorado.

The excessive depths to the oil and gas bearing sands at Wellington and nearby prospects, with corresponding increased drilling costs, place them out of the reach of small operators and they consequently become available only to the play of the large companies. The areas which exhibit possibilities within reach of the drill in eastern Colorado are limited to the eastern part of Larimer and Boulder Counties and western Weld County, with some chances in Morgan County.

There are further possibilities that production may be found along the Colorado-Kansas line, as the Midfields Oil Co. has developed a number of gas wells in the Dakota horizon south of the town of Wray in Yuma County. In the southern part of eastern Colorado, Pueblo, Crowley, Kiowa, Bent, Prowers and Otero Counties may possibly produce oil in the Dakota and there is also a possibility that the Pennsylvanian or Permian in this region may produce oil at depth, although the tests so far drilled have not been encouraging.

It must be borne in mind that in eastern Colorado, with the exception of the territory directly along the mountains, there are great difficulties in working out the geology. This is partially due to the flatness of the shale formations and also to the fact that in a large part of the territory the structure of the sediments which yield the oil is masked by overlying Tertiary beds. This will not only retard rapid development but will greatly increase the cost of prospecting. The maximum that can be expected from Eastern Colorado during the next two years is estimated at approximately 6,000 acres of proven territory or less than one-third of the producing area of the Salt Creek Field in Wyoming. Practically all of this acreage is closely held by the larger companies who will undoubtedly, keep tight control of the situation where production is found and develop it conservatively.

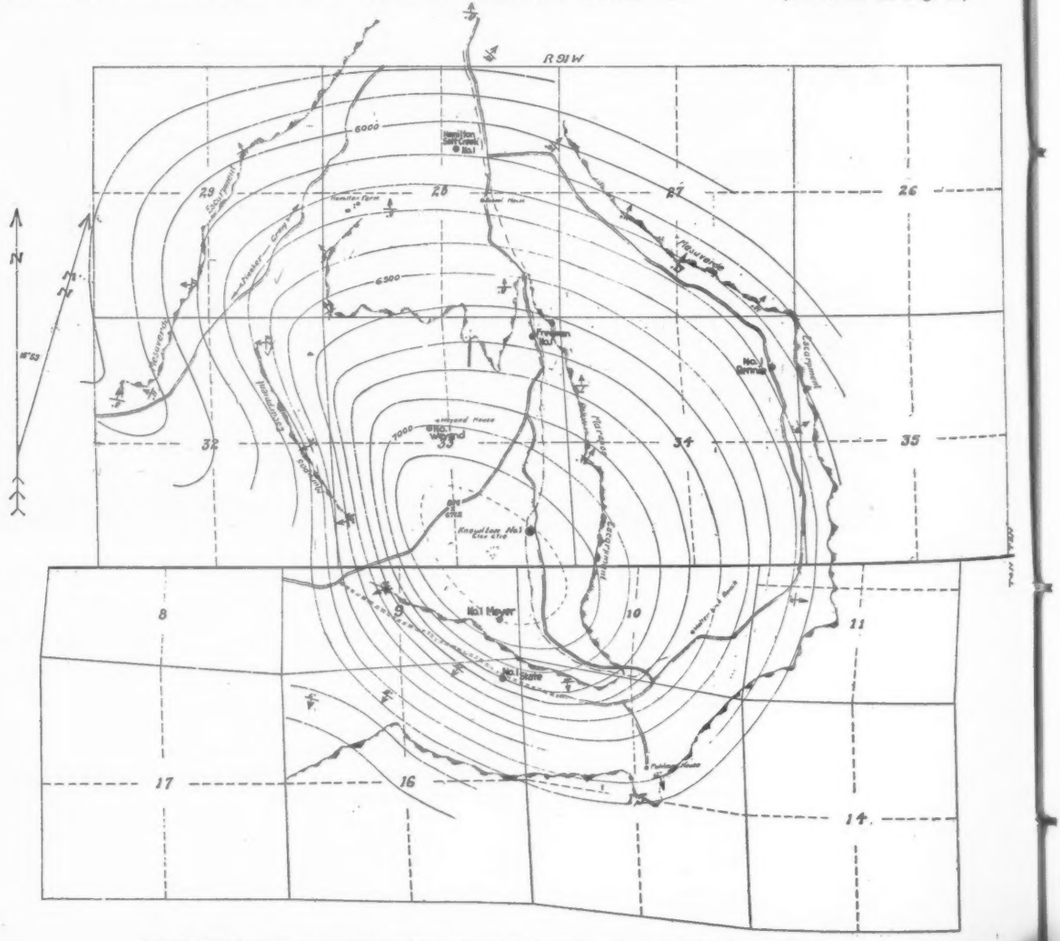
Northwestern Colorado holds more promise than northeastern Colorado so far as can be seen at present. As early as 1903 small production had been obtained in northwestern Colorado on the Rangely Dome, in Rio Blanco County. This field produced a light oil from crevices on a very large structure. Deeper drilling to the Dakota sand has developed to date only gas and salt water. The Rangely Dome still continues to produce about 200 barrels of oil per day.

Moffat Pool

The first indication of substantial production in northwestern Colorado occurred in January of this year when the Texas Co., brought in its No. 1 Knowlton, in the Moffat Pool, flowing at the rate of 4,580 bbls. per day from a depth of 3,820 feet. This oil is 41 gravity oil, yielding 40 per cent gasoline without cracking. The well is located 12 miles south of Craig, a town of approximately 1,000 inhabitants, and the terminus of the Denver & Salt Lake Railroad. It was started upon the recommendation of the company's geologist as a joint test with the Transcontinental Oil Co. which has a half interest in part of the acreage on the structure. Drilling commenced June 21, 1923. The well showed evidence of oil almost from its inception. Numerous oil shows were found in the upper Mancos Shales, one of which produced considerable quantities of oil. This was in September, 1923.

On January 15, 1924, the drill reached the top of the Dakota sand at 3,800 feet and at 1 foot in the well flowed 1,000 bbls. per day. It was finally completed February 29 at 20 feet in the sand, flowing 5,153 bbls. in 27 hours. Due to insufficient storage tanks, it was necessary to shut the well in immediately upon completion, before it had penetrated the full thickness of the Dakota, which is probably over 100 feet thick at this point. Outcrops of this sand in the mountains to the east indicate an oil saturation

(Continued on Page 62)



Map of Hamilton Dome, showing contours on top of Marapos sand. Contour interval, 100 feet.

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Oklahoma Field Operations

By C. D. Lockwood

Comar Oil Co.'s No. 1 Duncan 30,000,000-foot gasser in rank wildcat territory, north of Blackwell, Kay County, near Kansas line, may mean opening of new pool. Gypsy Oil Co. adds 4,000-bbl. well in Cromwell Field. Two wells in deep Tonkawa sand due soon. Several new fields decline.

A 30,000,000-foot gasser in rank wildcat territory near the Kansas line north of Blackwell in Kay County, that may mark the location of a new pool, was just about the only interesting spot in the week's news from the Oklahoma fields. It was the Comar Oil Co.'s No. 1 Duncan, NE cor. SW, Section 21-28-1w, and the gas was found at 1,880 feet. The company has quite a large block of acreage around this test covering a good structure which was mapped out some time ago, and the chances of finding a new pool in the locality are considered good.

While Cromwell operators were meeting again and postponing action still further, wells in that prolific pool continued to maintain the previous standard, and another was added to the 4,000-bbl. class by the Gypsy Oil Co., although the same company drilled through the sand in one place and encountered water. The Gypsy's No. 2 P. Stidham, SE cor. NW SW, Section 15-10-8, increased to 180 bbls. an hour from sand at 3,477-3,517 feet, while No. 2 Z. Stidham, SW cor. NW, same section, which topped the sand at 3,493 feet, drilled through it at 3,563 feet and ran into water at 3,565 feet. It was plugged back five feet, making 15 bbls. an hour and was still cutting about 9 per cent. No. 3 Z. Stidham, C NW SW NW, same section, was agitated and increased to 100 bbls. hourly from sand at 3,442-3,501 feet. The same company's No. 1 Wills, C SW NE NW, same section, was still drilling in, flowing 10 bbls. hourly with considerable gas from sand at 3,446-67 feet. The Mid-Kansas Oil & Gas Co.'s No. 1 Alexander, C SW NW NW, same section, was depened 15 feet and increased to 1,800 bbls. from sand at 3,425-85 feet. It was also making 8,000,000 feet of gas. The same company was delayed in drilling its No. 2 Alexander, C SE NW NW, same section, having had to pull and rerun the liner.

Two new wells in the deep Tonkawa sand were due in soon. The Comar Oil Co.'s No. 4 Koffenbrink, C SW NE SW, Section 36-25-1w, which passed the depth at which the deep pay was expected, was running the 5-inch to 4,211 feet in lime, and was thought to be on top of the pay. The same company's No. 4-W Carmichael, NE cor. Section 3-24-1w, Noble County side of the line, was rigging up company tools at 4,020 feet in broken lime.

The Prairie Oil & Gas Co.'s No. 2 Jones, SW cor. NW, Section 10-27-1w, Kay County, an old gas well, was opened up and started spraying 90 bbls. of oil.

Field Operations Fall

A decided slump in field operations was noticeable in the week ended June 14, when the total for Oklahoma was 1,553 compared with 1,647 for the previous week. The number of locations was about the same, with 69 new ones for the latter date and 67 before, but the rigs fell off from 212 to 177, while the drilling wells declined from 1,015 to 969, and the shut down wells also decreased from 240 to 222. The completions numbered 116 for the latter week, an increase of 3.

Several of the new fields in the State declined in production during the past week. The Stroud Field, with no new producers, averaged only 21,071 bbls. from 18 wells, a decrease of 3,692 bbls. daily. The Papoose did not enjoy its elevation very long and made a daily average of only 3,819 bbls., a slump of 2,589 bbls. with one additional well, increasing the number from 19 to 20. The Wewoka Field lost 13 bbls. with one new well, making 8,138 bbls. daily from 61 producers. The Cromwell Field, on the other hand, continued to grow with 28,411 bbls. from 28 wells, a gain of 2 producers and 3,305 bbls. The Tonkawa Field, with a loss of 18 wells due to deeper drilling in that number, gained 1,151 bbls. daily, reporting 36,275 bbls. from 672 wells. And the Burbank Field, having added 16 wells to its producing list, gained 457 bbls., reporting 93,279 bbls. from 1,505 wells.

Burbank Production

Daily average production of companies in the Burbank Field for the week ended June 18 was as follows:

Company—	Wells	Bbls.
Carter Oil Co.	184	7,909
Comar Oil Co.	7	165
Cosden Oil & Gas Co.	95	6,566
Devonian Oil Co.	16	305
Gardner Petroleum Co.	20	576
Gypsy Oil Co.	193	10,518
Kewanee Oil & Gas Co.	21	899
Laurel Oil & Gas Co.	16	289
Lorraine Petroleum Co.	15	230
Midland Oil Co.	33	4,744
Mid-Kansas Oil & Gas Co.	36	1,279
Peters & Oliphant	1	138
Phillips Petroleum Co.	57	11,675
Phillips Pet. Co. and Delmar Oil Co.	16	3,062
Phillips Pet. Co. and Skelly Oil Co.	166	7,235
Prairie Oil & Gas Co.	104	4,783
Producers & Refiners Corp.	29	577
Roxana Petroleum Corp.	57	984
Simons, Moore et al	29	457
Sinclair Oil & Gas Co.	145	5,047
Skelly Oil Co.	15	1,186
Tidal Oil Co.	43	1,022
Twin State Oil Co.	22	1,672
Total Burbank proper	1,320	71,308
Total last week	1,305	70,792
Difference	15	516
Kay County Extension—		
George S. Bole	2	450
Carter Oil Co.	11	2,193
Comar Oil Co.	18	1,708
Cosden Oil & Gas Co.	16	1,993
Gypsy Oil Co.	18	2,323
Laurel Oil & Gas Co.	2	532
Phillips Petroleum Co.	30	5,669
Mid-Kansas Oil & Gas Co.	10	721
Prairie Oil & Gas Co.	4	1,029
Pure Oil Co.	5	238
Roxana Petroleum Corp.	8	617
Dye, Tomlinson et al	8	643
Skelly Oil Co. and Phillips Pet. Co.	18	790
Sinclair Oil & Gas Co.	5	595
The Texas Co.	16	1,196
Twin State Oil Co.	14	1,274
Total, extension	185	21,971
Total last week	184	22,030
Difference	1	59
Total Burbank	1,505	93,279
Total last week	1,489	92,822
Difference	16	457

Daily average pipe line runs from the field during the week were as follows: Gulf Pipe Line Co., 13,633 bbls.; Cosden Pipe Line Co., 11,148 bbls.; Kay County Gas Co., 8,784 bbls.; Osage Pipe Line Co., 1,207 bbls.; Oklahoma Pipe Line Co., 18,350 bbls.; Prairie Pipe Line Co., 24,101 bbls.; Sinclair Oil & Gas Co., 5,642 bbls.; Moore Refining Co., 3,144 bbls.; Standish Pipe Line Co., 1,756 bbls.; Empire Pipe Line Co., none; Mid-Kansas Oil & Gas Co., 1,931 bbls.; Magnolia Pipe Line Co., none; Twin State Oil Co., 1,274 bbls.; Ozark Pipe Line Co., 2,309 bbls. Total, 93,279 bbls.

Northern Creek County

In northern Creek County, the Shaffer Oil & Refining Co. was deepening an old well, its No. 1, NW cor. SW SE, Section 15-19-9, at 3,142 feet.

J. B. Grieves shot his No. 1 Grayson, CSL SE SE SW, Section 12-19-8, with 80 quarts in sand at 2,127-55 feet and it had 2,100 feet of oil in the hole, and was fishing for five joints of casing. Floyd O. Howarth's No. 1 Harman, NE cor. Section 23-19-8, was a 20-bbl. well following a 20-quart shot in sand at 2,460-75 feet.

The Cortez Oil Corp. topped the lime at 3,087 feet in its No. 4 McGilbra, NW cor. SW NW, Section 2-18-7, and was drilling ahead at 3,917 feet.

The Oklahoma Producing & Refining Corp. had a rig up for its No. 4 Tiger, SE cor. SW SE, Section 18-19-10. Holmes & Jarvis topped the Wilcox at 3,190 feet in their No. 2 West, NW cor. SE NW, Section 17-18-9, and found pay at 3,220-33 feet, which put 700 feet of oil in the hole but was making a bailer of water an hour. The Sapulpa Fuel Co. had a rig up for its No. 2 Smith, NE cor. SE, Section 30-18-10.

J. E. Crosbie and others' No. 1 Richard, CEL SE NW SW, Section 25-15-7, was good for 120 bbls. natural and was also making 3 bbls. of water from sand at 3,290-98 feet.

The Wolverine Oil Co.'s No. 6, CNL NW SW SE, Section 8-15-8, was good for 450 bbls. from sand at 3,765-3,821 feet, after a 30-quart shot. The Texas Co.'s No. 1 Yarhola, SE cor. SW SW, Section 23-15-8, made 40 bbls. following a shot of 100 quarts in sand at 2,425-67 feet with first oil at 2,442 feet.

The White Oil Co. was building a rig for its No. 1, SW cor. NE, Section 2-14-8. C. G. Tibbens brought in a 50-bbls. producer in his No. 3 Sewell, NE cor. Section 13-14-8, with a 90-quart shot in sand at 2,345-2,405 feet. His No. 8 Johnson, SE cor. SW SE, Section 26-14-8, was a 10-bbl. well when it was treated with 60 quarts in sand at 2,468-2,514 feet.

Production in Tonkawa

Daily average production in the Tonkawa Field, by companies, for the week ended June 18, was as follows:

Company—	Wells	Bbls.
Amerada Petroleum Corp.	35	1,930
Blackwell Oil & Gas Co.	30	1,340
Carter Oil Co.	6	171
Champlin Refining Co.	2	6
Champlin Ref. Co. and Twin State Oil Co.	1	26
Comar Oil Co.	311	18,711
Cosden Oil & Gas Co. and Marland Ref. Co.	15	500
Gypsy Oil Co	97	4,187
Healdton Oil & Gas Co.	28	1,672
McCaskey & Wentz	42	2,700
McMan Oil & Gas Co.	2	16
Pennok Oil Co.	37	4,046
Phillips Petroleum Co.	4	176
Prairie Oil & Gas Co.	12	562
Sinclair Oil & Gas Co.	1	23
Silck-Comar Oil Co.	31	4,063
Southwestern Pet. Co.	15	734
The Texas Co.	5	46
White Eagle Oil & Ref. Co.	7	324
Total	672	36,275
Total last week	690	35,124
Difference	18	1,151

Daily average pipe line runs from the field were as follows: Kay County Gas Co., 12,492 bbls.; Ozark Pipe Line Co., 7,104 bbls.; Gulf Pipe Line Co., 3,389 bbls.; Champlin Refining Co., 7,004 bbls.; Bolene Refining Co., 1,457 bbls.; Producers & Refiners Corp., 552 bbls.; Enid Oil & Pipe Line Co., 474 bbls.; Oklahoma Pipe Line Co., 171 bbls.; Empire Pipe Line Co., 798 bbls.; Golden Rule Oil & Refining Co., 200 bbls.; Prairie Pipe Line Co., 2,634 bbls. Total, 36,275 bbls.

In the Osage

In the Osage, the Superior Oil Co. brought in another addition to its new Wilcox sand pool in Section 3-23-8. No. 2, CEL SE SW, found the first show of oil at 2,511 feet with the pay at 2,521 feet. It started off at 26 bbls. an hour and increased to 45 bbls. hourly. The first 24 hours' production was 887 bbls. The Indian Territory Illuminating Oil Co.'s No. 322, CEL NE NE SE, Section 20-23-7, a twin well, was shut in as a gasser good for 3,500,000 feet from sand at 734-805 feet. The Marland Oil Co.'s No. 3, SW cor. NW NE, Section 29-23-8, topped the oil pay at 2,879 feet and had 700 feet of oil in the hole with the bit one foot in.

The Marland Refining Co.'s No. 1, CNL NE SW, Section 2-22-7, was abandoned as a failure at 3,046 feet.

Just a few miles northwest of Tulsa, Howard, Duffield & Berlin abandoned their No. 8-A, C NE SE, Section 25-21-11, as a failure at 2,090 feet. The same interests were spudding their No. 6, NW cor. Section 15-21-12. The Selby Oil & Gas Co. shot its No. 5, NE cor. NW, Section 16-21-12, with 60 quarts in the Bartlesville sand at 1,347-63 feet and it made 10 bbls. afterward. Gillespie was spudding his No. 23, CEL NE, Section 8-20-12. The Mutual Oil Co. had a 900-bbl. well in its No. 7, C NE NW, Section 28-20-12, pay having been found at 1,932-2,054 feet. The Mutual Oil Co. was drilling at 415 feet in its No. 8, SE cor. NW NW, Section 28-20-12, and was moving in tools for its No. 9, CSL NW SE NW, same section. Shaffer Oil & Refining Co. and Winona Oil Co. found 22,000,000 feet of gas in its No. 1, NE cor. SE NW, Section 29-20-12, in the Burgess sand at 1,650 feet.

Breene, Markham & McKinney had a rig on the ground for their No. 9, CNL NW, Section 23-21-10.

In the northern part of the county, the Wiser Oil Co. shot its No. 5, CSL NE NW, Section 27-29-11, with 100 quarts in the Peru sand at 940-77 feet and it was good for only 30 bbls. afterward.

The Tuloma Oil Co.'s No. 9-A, SW cor. NW, Section 31-29-11 was dry and abandoned at 1,407 feet.

A REAL OLD TIMER

Anyone who has looked up logs of wells in the Osage must have noticed the frequency of the notation, "Drilled by Boggs Drilling Co." Bill Boggs of Barnsdall, Okla., started the company back in the early days when Mr. Barnsdall had a lease on the entire Osage Nation, and has drilled more wlls in that part of the State than perhaps any other man. All of the old timers know him for he is a veritable encyclopedia on sands and drilling records. Motorists who pass through Barnsdall on the road to Pawhuska also know his filling station at the west end of town.

The Mutual Oil Co. had a duster in its No. 1, CEL SW SW, Section 24-26-8, at 2,757 feet. The Atlantic Oil Producing Co. plugged its No. 4, SE cor. SW, Section 27-25-8, which was dry at 1,270 feet.

The Pawhuska Oil & Gas Co.'s old well, No. 11, NW cor. SE NW, Section 10-25-9, was dry and abandoned at 2,020 feet.

M. Grace Maxwell was spudding her No. 4, CSL SW SE, Section 5-24-11.

Only Three Barrels

The Rex Pyramid Oil Co. tried hard to make a well out of its No. 2, CNL NW, Section 26-23-10. It was treated o 40 quarts in the Burgess sand at 1,946-55 feet and to 100 quarts in the Batrlesville at 1,785-1,827 feet but responded with only 3 bbls. production.

The Peer Oil Corp. and Lorraine Petroleum Co. were drilling at 370 feet in their No. 1 CSL NW, Section 1-22-11. Steinberg & Lucas abandoned their No. 1-A, SW cor. Section 20-22-11, as dry at 2,621 feet.

McKinney, Page and others were spudding their No. 2 C SW, Section 9-21-9, and Breene,Markham and associates were also spudding their No. 8, CNL NW NW, Section 23-21-10.

The Peters Petroleum Co. abandoned a test below the lime in its No. 1, SE cor. Section 22-21-11. It was plugged as dry at 2,360 feet after topping the Mississippi lime at 1,805 feet. C. W. Titus likewise recorded a failure in his No. 1, NE cor. SE, Section 5-21-12, at 1,571 feet. The Fidelity Oil Co. was running tubing in its No. 5, CEL NE NE, Section 16-21-12, with 300 feet of oil in the hole following a shot of 80 quarts in sand at 1,760-78 feet. It had been plugged back from 2,003 feet. The Banrsdall Oil Corp.'s No. 18, NW cor. SE NW, Section 32-21-12, a twin to No. 4, topped the big lime at 1,662 feet, then found a sand at 1,990 feet, carrying oil at 2,008 feet. It was drilled to 2,151 feet, then plugged back to 1,940 feet. The same company's No. 12, SW cor. Section 4-20-12, another twin well, was good for 125 bbls. from the second break at 1,986-89 feet. Kennedy and others' No. 1, C NE SW, Section 29-20-12, was good for only 7 bbls. after a 15-quart shot in sand at 2,064-76 feet.

Okmulgee County

In Okmulgee County, D. D. Nickelson had a machine in place for his No. 1 Lewis, SE cor. Section 4-15-11. Hiram C. Wilson's No. 2 Wilson, SW cor. NW, Section 6-15-11, was shot with 110 quarts in sand at 2,665-2,723 feet and made 180 bbls. afterward. The Guardian Oil Co. found a sand at 2,525-32 feet in its No. 6, CWL SE SW, Section 7-15-11, but drilled through it and was going ahead at 2,855 feet. The Waite Phillips Co. had an 85-bbl. producer following a 40-quart shot in its No. 2 Richards, NE cor. SW SW, Section 14-15-11, from sand at 2,826-38 feet. The same company was drilling its No. 5 Richards, NE cor. SE NW, same section, at 2,420 feet.

The Marion Oil Co. cleaned out its old well, No. 2 Freeman, NW cor. NE, Section 7-13-15, and it made 1,000,000 feet of gas from sand at 1,954-2,000 feet. The Lambert Oil & aGs Co. was rigging up its No. 5 Freeman, SE cor. NE NE, Section 7-13-15.

Charles Detter had a rig on the ground for its No. 1 Scott, SW cor. NW NW, Section 22-13-11, and A. B. Ice was drilling at 1,823 feet in his No. 3 Murrell, CWL NW NW, Section 26-13-11. The Denver Producing & Refining Co. brought in a 20-bbl. well in its No. 2 Thomas, C NE NE, Section 32-13-11, from sand at 3,223-27 feet. The same company's No. 10 Thomas, CWL NW SE, same section, was good for 25 bbls. natural from sand at 2,538-84 feet.

Clark and associates topped the big lime at 2,920 feet in their No. 8 McIntosh, SE cor. NW SE, Section 22-13-12, and found a show of oil in the top of sand at 2,958 feet, but the hole was abandoned as dry at 2,974 feet.

The Southern States Oil Co. spudded and shut down its No. 1 Grayson, CSL SE SE, Section 6-12-12.

The E. & R. Drilling Co. abandoned their No. 3 Hawkins, SW cor. NW NE, Section 4-11-12, as a failure at 1,991 feet. Moffett & Slick were also spudding their No. 3 Hawkins, NW cor. Section 9-11-12.

H. C. Deitrich abandoned his No. 1 Hodge, NW cor. SW, Section 5-12-13, as a duster at 2,054 feet.

Tulsa County

In Tulsa County, the Sand Springs Home abandoned its No. 1 Fife, CWL NW NW SW, Section 17-19-11 as dry at 2,445 feet. The same company's No. 2 Davis, NE cor. SE NW Section 25-19-11, topped the lime at 1,835 feet.

The Superior Oil Co. had a rig up for its No. 3 Johnson, SW cor. NE SE, Section 26-19-11. Jackson & Wise abandoned their No. 1-A, SE cor. NE NW, Section 25-19-11, as a duster at 2,512 feet.

In the Vern Station area, A. R. Simmons and others had a 200-bbl. natural producer in their No. 1-A Partridge, CWL SE NW, Section 4-19-12, in sand at 1,955-83 feet. The same interests were also drilling their No. 2-A Partridge, SW cor. NE NW, same section, at 340 feet. The Shaffer Oil & Refining Co. was starting some new ones in this locality as a result of a recent completion. Its No. 5-A, CWL NW NW, Section 4-19-12, was drilling below 200 feet; tools were being rigged up for No. 6-A, CEL SE SW NW, and also for No. 7-A, NE cor. SW NW, same section. The Echo Oil Co. was also rigging up tools for its No. 2 Grayson, NE cor. SW NE, Section 5-19-12, and had a rig built for No. 4-A Grayson, C SW SE NE, same section; No. 5-A Grayson, C NE SE NE, same section, was drilling at 400 feet, and a rig was in place for No. 6-A Grayson, CEL NE NE, same section. Thompson & Black were drilling their No. 1-A Partridge, NW cor. SW SW, Section 5-19-12, a twin to an abandoned gas well, at 200 feet.

In the old Bruner area, the Sand Springs Home was cleaning out its No. 1 E. Bruner, NE cor. SE SW, Section 6-19-12, at 1,500 feet. The same company's No. 4 E. Bruner, SE cor. SW, same section, was good for 5,000,000 feet of gas in sand at 1,628-32 feet, and was shut in. The same company's No. 5 Berryhill, CNL NE NE NW, Section 7-19-12, was drilling at 750 feet.

Caldwell & Sons were rigging up tools for their No. 2 Town lots, CWL NW NW NW, Section 8-19-12, a twin to their No. 1 which was good for 400 bbls. of 42.2 gravity oil natural from sand at 1,957-58 feet.

The Sand Springs Home was drilling its No. 2 Grayson, NW cor. SE, Section 18-19-12, at 300 feet. The Pennok Oil Co. was spudding its No. 1-W, C NW, Section 28-19-12, and the Brooks Drilling Co was also spudding its No. 1-A Grayson, NW cor. SW SW, Section 29-19-12. Munn Bros. were drilling their No. 1-A Bodrey, NE cor. SE SE, Section 30-19-12 at 1,060 feet.

On Millionaire's Row

In the Burbank Field, along "Millionaire Row," the Midland Oil Co.'s No. 2, CSL SW SE NW, Section 14-27-5, which made 400 bbls. natural, from sand at 3,030-67 feet, was shot with 20 quarts and produced 858 bbls. afterward; No. 4, SW cor. NW, same section, which was a 480-bbl. natural well, decreased as a result of shooting with 120 quarts, in sand at 3,027-48 feet, the production having dropped to 210 bbls.; No. 9, SE cor. NE NW, same section, topped the sand at 3,007 feet and found oil at 3,008-42 feet. It was shot with 90 quarts and responded with only 90 bbls. of oil; No. 14, CNL NE NW NW, same section, was good for 240 bbls. following a 110-quart shot in sand at 3,106-31 feet.

The Midland Oil Co.'s No. 11, C SE NW NW, Section 14-27-5, was good for 50 bbls. after an 80-quart shot in sand at 3,071-3,103 feet. The same company's No. 13, NW cor. same section, was shot with 120 quarts in sand topped at 3,053-3,103 feet and had a hole full of oil as a result.

The Midland Oil Co.'s No. 16, NE cor. SE, Section 13-27-5, was good for 135 bbls. after a 120-quart shot in sand at 2,910-73 feet; No. 10, C SW NE NW, Section 14-27-5, made 102 bbls. the first 24 hours, after a shot of 80 quarts in asnd at 3,068-3,102 feet, and fell to 88 bbls. the next day. No. 12, CWL SW NW NW, same section, was shot with 110 quarts in sand at 3,111-57 feet and produced 240 bbls. afterward.

Phillips Petroleum Operations

The Phillips Petroleum Co. & Delmar Oil Co. shot No. 1, SE cor. Section 10-27-5, an old well, with 110 quarts, in sand at 3,046-87 feet and it made 300 bbls. The Phillips Petroleum Co.'s No. 8, CEL NE SE SW, Section 11-27-5, was good for 2,384 bbls. in 16 hours, following a shot of 90 quarts in sand at 2,945-94 feet. The same company's No. 14, CNL NE NW SW, same section, was good for 1,750 bbls. from oil sand at 2,935-80 feet. The Midland Oil Co.'s No. 16, NE cor. SE, Section 13-27-5, made 166 bbls. from sand at 2,910-73 feet; No. 12, CWL SW NW SE, same section, made 200 bbls. from sand at 2,941-82 feet, and increased to 333 bbls. when shot with 90 quarts; No. 5, CWL NW SW SE, same section, was a 150-bbl. well after being shot with 120 quarts in sand topped at 2,912 feet, with total depth at 3,003 feet in shale; No. 6, C NE SW SE, same section, had 1,000 feet of oil in the hole natural from sand at 2,933-80 feet; No. 7 C NW SE SE, same section, was shot with 90 quarts and responded with 200 bbls. from sand at 2,932-75 feet; No. 9, CEL SE NE SE, same section, was good for 250 bbls. after an 80-quart shot in sand at 2,935-68 feet.

The Phillips Petroleum Co.'s No. 3, C SW NE SW, Section 13-27-5, made 875 bbls. after a shot of 100 quarts in sand at 2,931 feet, with oil at 2,943-99 feet.

Prairie Oil & Gas

The Prairie Oil & Gas Co. gave its No. 11, CEL SE NE SW, Section 13-27-5, a second shot of 100 quarts in sand at 2,957-3,003 feet and it made 700 bbls. afterward. The same company's No. 14, C NE SW SW, same section, had 2,000 feet of oil in the hole from oil pay at 2,963-3,002 feet.

The Prairie Oil & Gas Co.'s No. 16, C SW NE SW, Section 13-27-5, made 250 bbls. natural from sand at 2,951-99 feet; No. 13, C NW SE SW, same section, was good for 292 bbls. natural from a sand topped at 2,947 feet, with oil at 2,954 feet and it was still drilling at 3,012 feet; No. 10, NE cor. SW, same section, was good for 300 bbls. following a shot of 80 quarts in sand at 2,961-3,027 feet, with first oil and gas at 2,967 feet; No. 2, CSL SW SE SW, same section, was a 200-bbl. well when shot with 100 quarts in oil pay at 2,950-3,005 feet; No. 4, SW cor. Section 13-27-5, was making 50 bbls. on the swab after a 100-quart shot in sand at 2,960-3,036 feet, with first oil at 2,972 feet; No. 6, CWL SW NW NW, same section, made 387 bbls. natural from sand topped at 2,950 feet, with first oil at 2,962 feet and total depth at 3,001 feet; No. 7, NW cor. SW, same section, topped the sand at 2,954 feet, found oil at 2,967-3,018 feet and when shot with 90 quarts made 576 bbls.

The Twin State Oil Co.'s No. 1, SE cor. SW, Section 18-27-6, made 30 bbls. after a 130-quart shot in sand at 2,894-2,950 feet; No. 4, SW cor. same section, was good for 175 bbls. following a shot of 120 quarts in sand at 2,882-2,964 feet, with first oil and gas at 2,915 feet; No. 7, NW cor. SW, same section, made 750 bbls. after a 120-quart shot in sand at 2,910-72 feet.

The Kewanee Oil & Gas Co.'s No. 3, CWL SW NW SE, Section 18-27-6,

(Continued on Page 114)

East Central Texas

By Staff Correspondent

With only two wells in the Richland district added to the producing list during the week, and with Powell completions remaining of a very ordinary nature, the East Central Texas fields furnished nothing of importance in the way of new developments. Several wells nearing the sand in the Richland area, were getting close to the point where they should shed some light on that interesting field, but had not yet reached the producing level. New locations continued to be staked in Hopkins County, and Rains County received another setback in the form of a deep duster.

In Hopkins County, the Gulf Production Co. staked a location for its No. 1 W. J. Davis, on the Clark survey. The Alcorn Oil Co.'s No. 1 Coppedge, on the Hamilton Survey, was drilling in shale at 3,878 feet. A rig was being built for the Bar Tex Drilling Co.'s No. 1 McClure on the Waggoner Survey, and a rig was in place for Kelsey and others' No. 1 Brooks, on the Dowell Survey. Cy Borden and others set 187 feet of 10-inch casing in their No. 1 Smith, Mitchell Survey, and shut it down.

In Kaufman County, Skinner & Lyles were below 3,535 feet drilling in red shale in their No. 1 Barrow, on the Terrell Survey.

In Rains County, Yost and others abandoned their No. 1 Tallett, on the Tallett Survey, at 3,450 feet. McLaughlin & Lyles were drilling in shale at 2,005 feet in their No. 1 Dowell, on the McMahon Survey.

In Navarro County, the McMann Oil & Gas Co.'s No. 8 Chapman, on the Anderson Survey, was drilling at 3,070 feet and making 7 bbls. from sand at 3,054-57 feet. The Roxana Petroleum Corp.'s No. 9-A McKie, Buffington Survey, was swabbing 85 bbls. from sand at 2,856-78 feet. The Gulf Production Co. abandoned its No. 9 Witherspoon, on the Broyles Survey, as dry at 2,985 feet. The same company's No. 3-A McKie, Buffington Survey, was making 7,000,000 feet of dry gas from sand at 3,076-84 feet. The Kirby Petroleum Co.'s No. 4 McKie, Buffington Survey, was swabbing 850 bbls. from sand at 2,963-67 feet, with 40 per cent water. The same company's No. 5, same survey, was drilling in lime at 2,815 feet. Lambert and others abandoned their No. 1 Woolens, on the Smith Survey, as dry at 3,018 feet. The Tidal Oil Co.'s No. 11 Cerf, Smith Survey, was swabbing 125 bbls. from sand at 2,850-2,990 feet. The same company's No. 12 was swabbing 120 bbls. from sand at 2,855-2,981 feet, 15 per cent of which was water. The Texas Co.'s No. 20 Kent, Smith Survey, was good for 50 bbls. on the pump from sand at 1,478-1,565 feet. The same company located its No. 23 Kent. G. Kent's No. 1 Allen, on the Smith Survey, was dry at 3,262 feet and was shut down for orders. Longford and others abandoned the derrick for their No. 1 Woolens, on the Smith Survey.

Nothing of importance transpired in the Richland district. Travis and others' No. 2 Swink, on the White Survey, made 25 bbls. initially from sand at 2,973-78 feet. Stroube & Stroube were due in soon with their No. 1 Davis, same survey, which was below 2,877 feet. Miller Lewis apparently had a failure in No. 1 Swink, White Survey, which tested salt water at 3,093 feet and was shut down for orders. G. Moore bailed No. 1 Hillburn, John White Survey, dry at 2,960 feet and was to deepen it. The Sun Oil Co. had three wells near the top of the sand on the same farm where it struck a 2,864-bbl. well last week, and started two others. The Hallmack Oil Co. was cleaning out its No. 1 Webb, White Survey, with a show of oil in sand at 2,918-52 feet. Guttman and others abandoned their No. 1 A. J. Swink on the Ross Survey, as dry at 3,024 feet. The Boyd Oil Co.'s No. 2 Webb, White Survey, made 480 bbls. initially on the swab from sand at 2,938-77 feet.

Wyoming Field Operations

By F. B. Taylor

Colorado Fuel & Iron making lease on small tract for oil exploration. Six spudding in at Moffat Field. Midwest starting five wells on Lake Basin Dome, Montana. Northwest Wyoming activity. Deepest hole in Wyoming being drilled by Producers & Refiners on Simpson Ridge Field.

CASPER, Wyo., June 21.—The Oregon Basin in Park County, Wyo., is coming in for a play in the deeper sands that is attracting interest. The Ohio Oil Co. has a well drilling about 1,800 feet and Flinn & Ache of Pittsburgh, Pa., have started a second well on the SE cor. NW, Section 11-49-102 that is considered very well located on the structure.

While the Frontier horizons may contain some oil or gas in the Oregon Basin, the main production is expected oy the operators in the Dakota formation about 2,500 feet and may lie at 3,000. The Flinn & Ache well is starting a 20-inch hole so as to go very deep if necessary, it is now about 200 feet.

The Oregon Basin structure lies south of Cody, Wyo., and between that city and Meteetse. It is a large structure made up of two domes on the same axis and the area covers about 15 square miles. In the early days of the development, the Franco-Wyoming interests took over the structure and drilled several wells that turned out to be heavy gassers, also there was some oil found about 600 to 900 feet but this was hardly large enough to warrant development. The Franco-Wyoming had its Salt Creek development at the same time and the Salt Creek took up attention.

Colorado Fuel & Iron

The Colorado Fuel & Iron Co. of Colorado has large land holdings in Colorado which have assumed considerable value since the oil boom started as to their possible petroleum content and the company has been beseiged with applicants for leases. President J. F. Welborn issued the following statement regarding the company's position in the matter.

"Some oil is reported to have been discovered in new fields in Colorado. The Colorado Fuel & Iron Co. owns acreage in different parts of the State. This acreage includes its coal mines and reserve lands, some of which contains coal; also its timber and grazing lands.

"As different oil companies have prospected in the State, rumors have spread as to oil having been discovered on property belonging to the Colorado Fuel & Iron Co. and of contracts made by it with oil companies. As no oil has been actually discovered on our properties and no contracts have heretofore been made by us for oil prospecting, I have denied that these rumors had any basis in fact.

"Some oil companies, apparently believing there may be oil on our lands, have sought agreements for explorations. We have deemed it unwise to spend money for this purpose, providing satisfactory terms can be secured from competent companies.

"Such terms have recently been offered by reliable companies and we are now making a lease on one of our small tracts of land. Leases on other tracts may follow.

"The company will in this way, without expense to itself, ascertain whether there is any basis for the belief that oil exists on its properties."

Six Spudding at Moffat

The Moffat Field is now starting six wells spudding. The Texas Co. has five rigs up; the Midwest Refining Co. has one rig on the Illes Dome; the Hamilton Salt Creek Oil Co. is drilling and there are four other locations where rigs are going in or soon to start rigbuilding by smaller companies. All of these wells will have to drill quite deep before reaching the sand and it is expected it will be late fall or winter before they are completed.

The Prairie Pipe Line Co. is preparing for the tank farm about a mile from Craig station and about 16 miles from the Moffat Field. The route has been surveyed and work is to start at once. The production will be handled by rail until an idea is had of the size of the production and then if necessary a pipe line will be laid to Parco, Wyo.

The country north of Craig and along the Wyoming-Colorado line is being scouted closely for other structures like the Moffat Field and the Dutch-Shell interests are reported to be getting ready to drill some wells near the line on the Wyoming line south of Baggs. This firm has been holding some leases in the Baggs vicinity for over a year.

Fort Collins District

The well on the Fort Collins structure in Colorado being drilled by the Union of California, is reported nearing the sands of the Dakota series and a completion is expected early in July. The deep drilling required for the wells in this district requires many weeks to complete a hole and this well was started last winter. There are three structures in the Fort Collins district expected to prove productive and the northern one or Wellington Dome is the one on which the Union drilled its discovery well last fall that came in a big gasser and then started spraying oil just before it was shut in.

The rotary well being drilled on the Wellington Dome is cementing the 15-inch pipe and will be shut down for about a week. The Ohio Oil Co.'s well on the Haystack structure near Boulder, Section 28-2-70, is about 3,200 feet and is making excellent time. This well of the Ohio's is expected to reach the sands before some of the other wells started a full month before the Ohio commenced work.

The Union Oil Co. of California has two wells drilling on Section 6-9-68 on the Wellington structure, one at 2,980 feet and the other at 450 feet. On the Fort Collins structure the Union's test is at 3,380 feet and the Douglas Lake well of the same firm is at 1,234 feet. The Union of Colorado, (no relation to the Union of California), is drilling a well on the Wellington Dome and is at 1,965 feet. This location is on Section 8-9-69. It is considered by many geologists that this location is rather far down on the slope of the structure and will necessitate a deep hole to reach the sand.

I. A. Deline and others on Section 28-2-70 near Boulder have set the 20-inch casing and the hole is about 250 feet. The Dry Creek Oil & Gas Co. drilling on Section 19-5-69 is shut down about 1,400 feet. This location is near Loveland. The Leidecker well at Pinion in LaPlata County, Section 25-33-13 is drilling at 3,150 and the Jones Point Oil Co., Section 1-22-60 near Pueblo is drilling after being shut down for cement to set, the present depth of the hole is 1,563. The Estes Park & Big Basin Oil Co., on Section 36-8-62, in Weld County, has spudded in its test and the hole is about 150 feet.

The White River Development Co. in Rio Blanca County, Section 31-2-96 is 1,476 feet and drilling in shale and Love and others in LaPlata County on Section 22-32-13 are underreaming at 900 feet. The Ne-No-She Oil Co. on Section 18-20-46 is drilling below 4,300 feet in Kiowa County and the San Carlos on Section 35-22-65 in Pueblo County is shut down for the present at 1,000 feet. The Eagle Rock Oil Co. on Section 30-20-63 struck a heavy water flow at 2,980 and is trying to shut off.

Operations in Utah

In Utah the Utah Oil & Refining Co. in Emery County, Woodside structure, Section 12-19-13, is shut down at 3,370 feet and on Section 12-15-11 in Carbon County on the Farnham Dome the same firm appears to have a dry hole with the bottom about 3,300 feet and nothing commercial. The Big Six Oil Co. is cleaning out on Section 34-35-21 in Grand County, Moab Dome, with the well at 2,825 fect and the Monumental Oil Co. on the Hulkito Dome, San Juan County, has set casing at 1,617 to shut off cave on Section 22-42-17.

The Crescent Eagle Oil Co. in Grand County on the Thompson Dome is shutting off a water flow at 2,330 feet and the Western Empire Oil Co. in Summit County on Section 16-2-5 on the Coalville Dome is also trying to shut off a water flow at 1,800 feet. The Ute Petroleum on the Duchesne structure in Duchesne County is 2,734 feet and shut down and the Producers & Refiners well on Section 22-3-24 in the Clay Basin, Daggett County is drilling at 420 feet. The Southwest Oil Co. on Section 22-43-22 in San Juan County on the Boundary Butte is shut down and looks like a producer. The hole is about 1,750 feet and has around 1,500 feet of oil in the hole.

New Mexico

In New Mexico, the Shiprock Oil Co. in San Juan County on the Farmington structure, Section 12-29-13 is shut down about 1,200 feet and the well being drilled by Hall and others on the Aztec Dome in San Juan County, Section 25-30-12. On the Bloomfield Dome, Section 14-29-11, San Juan County, Hubble & Hall have their test at 615 feet and shut down and the Gypsy Oil Co. on Section 17-26-18 on the Tocito Dome is also shut down at 2,500 feet. The Producers & Refiners on Table Mesa Dome on Section 3-27-17 is at 1,975 and drilling in shale and the Midwest Refining Co. on the Hogback Dome in San Juan County is moving for the No. 7 well on that structure.

Lake Basin Dome

The Hepp well of the Midwest Co. is into the Dakota sand and found oil in that formation. The Midwest is preparing to start five wells on the Lake Basin Dome in Stillwater County, Montana, and will try and have these new tests completed by fall.

In southern Wyoming near Iron Mountain, about 30 miles north of Cheyenne, the Midwest has completed its fourth shallow hole drilled to determine a structure there. This structure shows on the surface at one point, but the geologists were unable to locate the escarpment because of Tertiary overlay, trenches were dug at points and because at other points

(Continued on Page 104)

Kansas Oil Field News

By C. D. Lockwood

Little of interest occurred in the Kansas fields during the past week. New work appeared to be slackening somewhat, but not to any great extent. During the week ended June 14, the total number of operations 417, compared with 401 for the previous week. This gain was due to an increase of drilling wells from 217 to 222, and an increased number of shutdown wells from 66 to 71. There were also 22 completions during the latter week, whereas only two wells were officially completed the week before. The locations numbered 40 against 41 the previous week, and the rigs slumped from 75 to 62.

Added evidence that Russell County contains real oil territory was furnished during the past week when Stearns & Streeter and the Derby Oil Co. swabbed their No. 1 Oswald, SE cor. SW SW, Section 8-12-15w, for a full 24 houds and it averaged 42 bbls. an hour or 1,008 bbls. daily. The original discovery well in the SW cor. SE, same section, was being tubed.

Rush County

Rush County was not faring so well as Charles Noble and others encountered a hole full of water at 3,315-20 feet in their No. 1 Wallace, C SW, Section 3-16-16, and were shut down for orders. This well had a showing of gas in the top of a sand at 1,895 feet.

Another Rush County test had a rig in place. It was George T. Green and others' No. 1, NW cor. Section 22-18-19w.

In Graham County, the Keys Petroleum Co. had a rig on the ground for its No. 1 Taxton, SE cor. NW, Section 23-8-24w.

In Gove County, the Keys Petroleum Co. had a rig on the ground for its No. 1 Quinton, NW cor. SE, Section 2-11-26w.

A new one was under way in Lincoln County. The Amerada Petroleum Corp.'s No. 1 Crawford, NE cor. SW SE, Section 16-11-7w. was drilling at 500 feet.

Saline County was also included in the new territory being tested by the drill. Thralls and others had a rig up for their No. 1, SE cor. NE NW, Section 15-15-4w.

In Reno County, Jennings, Pells and others were moving in tools for their No. 1 Mohr, SE cor. SW SW, Section 2-25-6w.

Mitchell County was also coming in for its share of the big play. The Alcorn Oil Co.'s No. 1 Beeler, NE cor. Section 10-9-8w, was drilling at 400 feet. The Amerada Petroleum Corp. spudded and shut down its No. 1 Jellison, NW cor. SE, Section 19-13-9w. Berry & Rosenthal were spudding their No. 1 Lambert, C NW, Section 31-12-10w.

Two new efforts were started in Russell County, also. Garfield & Buell spudded and shut down their No. 1 Dienworth, SE cor. NE SW, Section 1-14-11w, and the Alcorn Oil Co. was drilling its No. 1 Sellers, SE cor. Section 36-15-13w, at 430 feet.

In Barton County, Jasper & Beschka were drilling their No. 1, SE cor. NW, Section 11-16-12w, at 450 feet.

In Rice County, Forney & Elwell had a rig in place for their No. 1 B. Walker, SW cor. NE, Section 10-18-6w.

In Reno County, the Reon Oil Co.'s No. 1 Sam Short, NW cor. NE, Section 13-23-8w, was drilling at 1,450 feet.

Cowley County

In Cowley County, the Waite Phillips Co. and others were drilling at 630 feet

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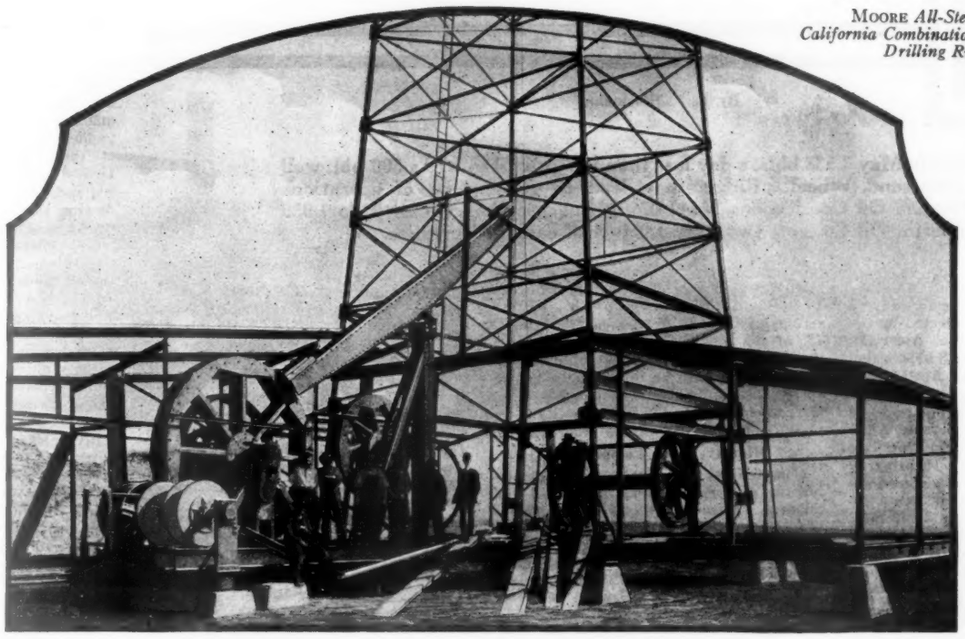

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MOORE TUBULAR STEEL DERRICKS

California Field Operations

By L. P. Stockman

Production in May 3,538 bbls. a day less than in April. Standard's 500-bbl. well in new deep sand, Wheeler Ridge, may lead to resumption of operations there, Pomona Oil Co. deepens No. 1 Long Beach and increases it to 1,030 bbls. Superior Oil Co. gets two over 1,000 bbls. each at Torrance.

LOS ANGELES, Cal., June 21.—Production of crude in California during May, according to figures collected by the Pacific Coast office of the American Petroleum Institute, was 3,538 bbls. a day less than the output during April. The daily avearge output during the past month of 639,793 bbls. is comparable to an output of 643,328 bbls. during April and 694,689 bbls. during May of last year. Santa Fe Springs, Huntington Beach and Long Beach all registered declines. The present output at Santa Fe Spring of 69,351 bbls. daily is 3,362 bbls. less than the daily output during the previous month and 150,919 bbls. less than the average output during May of last year. Huntington Beach, with a daily average production during May, of 48,584 bbls. was 2,778 bbls. under the output during April and 49,905 bbls. less than the daily output during May, 1923. Production at Long Beach during May was quite firm and, although it was 8,990 bbls. less than the production during April, it i sonly 2,131 bbls. less than the daily average recorded during May of last year.

Torrance showed an increase of 2,737 bbls., the May daily average being 57,538 bbls., compared with 54,801 bbls. during the previous month. Dominguez showed only a comparatively small increase, but this was due to the fact that no new wells were completed during the period. A new district, however, was added to production reports by the completion of the Union Oil Co.'s No. 1 Athens at Rosecrans. The new district is credited with an output during the month of 18,861 bbls., or an average of 606 bbls. daily. Kern River, McKittrick, Coalinga, Wheeler Ridge, Ventura-Newhall, Santa Maria and Richfield all showed a smaller production but the decrease was in most instances negligible. The production in the Midway Sunset district was up 5,171 bbls., the total production for the month of 3,233,550 bbls. averaging 104,308 bbls daily, compared with 99,137 bbls. during the previous month.

During June, Wheeler Ridge should show an increase, due to the completion by the Standard Oil Co. of a deep sand well. Santa Fe Springs, Huntington Beach and Long Beach are expected to show decline and, while the drop will probably not be large, it should have a tendency to strengthen the market. No great change is expected in the Torrance Field, but several important factors may cause a variation.

Addition to Stocks

During the month of May 2,176,286 bbls. were added to the State stocks. Of this total, 930,056 bbls. was residuum and heavy crude, 1,152,784 bbls. refinable crude and 93,446 bbls. tops. The total stocks on hand at the close of the month was 99,511,937 bbls. There are at present 48,089,302 bbls. of residuum and heavy crude on hand, compared with 40,794,341 bbls. in storage at the close of May, 1923. Refinable crude, 20 degrees and lighter, totaled 37,547,642 bbls., 13,841,759 bbls. greater than the storage at the close of May last year. The stocks of tops on hand, 13,874,993 bbls., is 8,206,319 bbls. greater than the storage of 5,668,674 bbls. on hand May 31, 1923. There were 150 new wells completed, with an initial daily output of 56,451 bbls., 32 holes abandoned and 112 new rigs erected. There were 10,900 active producing wells and 514 strings of tools in operation. Over half, 78, of the new wells completed were in the Torrance Field. Long Beach, with 28 new wells, with an initial daily output of 15,886 bbls., and Midway-Sunset, with 22 completions and 7,745 bbls. of new production, followed in the order named.

Midway Field Completions

Completions in the Midway Field during the past month were fairly well distributed, several operators finishing more than one new well during the period. The Pacific Oil Co. added the largest amount of new production by bringing in three wells. No. 1, on Section 25-31-23, was a 75-bbl. pumper of 26.5 gravity oil from 2,810 feet, but No. 32, on the same section, came in flowing 1,500 bbls. from 3,455 feet. No. 85, on Section 5-32-24, pumped 360 bbls. of clean 24.3 gravity oil from 2,545 feet. The Chanslor-Canfield Midway Oil Co. also furnished three new wells, but their combined output was much smaller than that of the Pacific's completions. The company fiinshed two pumpers on Section 9-32-23 and spudded in another, No. 36. The successful completions were Nos. 35 and 40, both listed as 95-bbl. wells. The former was brought in from 2,950 feet and the latter from 2,645 feet. On Section 26-31-22, the company finished No. 25 after drilling it to 2,080 feet and was rewarded with a 20-bbl. pumper of 14.8 gravity oil. The Associated Oil Co. finished a 95-bbl. pumper on Section 22-31-23. It was drilled to 3,225 feet and is pumping a good gravity oil, testing 31.3 degrees. The Midland Oilfields (California Petroleum) increased its production 1,100 bbls. a day by bringing in No. 6 on section 24-31-23 and No. 2 on Section 34-31-24. The former, a flowing well, was good for 950 bbls. a day from 3,505 feet, while the latter pumped 150 bbls. from 4,160 feet. The company spudded in one new well on each section. The Buena Vista completed No. 8 on Section 32-21-24 and spudded in No. 9. The company's new producer, No. 8, pumped 250 bbls. of 24.1 gravity oil from 3,700 feet. The North American has been keeping two strings of tools in operation on Section 30-31-24, following the resumption of work some time ago, and the completions of Nos. 4 and 6 on this property resulted in the spudding in of Nos. 7 and 8. No. 4 came in flowing 1,000 bbls. from 3,315 feet, while No. 6 was rated at 2,000 bbls. from 3,702 feet. The company has developed a substantial production on this, a Government lease. Bell Evans finished a 120-bbl. pumper. No. 4, on Section 35-32-23, from 1,705 feet, and immediately spudded in No. 6 and erected a rig for No. 7. The latter will be drilled following the completion of No. 6.

Wheeler Ridge

During the month of May, only one well was completed at Wheeler Ridge, the Standard bringing in No. 10 as a 25-bbl. pumper from 2,845 feet. During the past week, however, the company finished No. 9 as a 500-bbl. flowing well and incidentally proved the existence of a deep sand in this new fields. Wheeler Ridge has heretofore been regarded as being more or less limited, but the discovery of the deep zone may result in this district becoming a satisfactory producing area. Only a small amount of development work is being done, due to the fact that only the Standard and General Petroleum Companies have been able to develop production. The deep sand, however, may result in a resumption of operations in one or two other wells, with a good chance for at least one completion.

There were no wells listed in the Lost Hills-Belridge district during May, where operations are still more or less at a standstill. Elk Hills, however, contributed two new wells, good for approximately 1,650 bbls. The best completion was finished by the Pacific Oil Co., on Section 27-30-24. The company's No. 54 came in flowing 1,500 bbls. of 17.9 gravity oil from 3,285 feet. The Associated Oil Co. finished No. 22 on Section 26-30-24 and secured a 150-bbl. pumper from 3,245 feet. The Associated, Belridge, Pan-American, and Pacific Oil Companies are all doing considerable development work which may result in several completions during the next 30 to 60 days.

Torrance

The Chanslor-Canfield Midway Oil Co. brought in four wells at Torrance during the past week, but their combined production of 1,213 bbls. was exceeded by the output from two wells finished by the Superior Oil Co. The former company's best well was No. 13 Del Amo, which registered 798 bbls. during the first 24 hours. This is the biggest producer, and only flowing well this lease has yielded and the oil, testing 22.6 degrees, is the highest gravity yet produced. Drilled to 3,673 feet and finished with an 8¼-inch oil string, it was brought in flowing through a ½-inch bean, under a pressure of 430 pounds. No. 14 on this lease, finished at 3,450 feet, resulted in only a small pumper. One a production test it made 70 bbls. of 18.8 gravity oil, which showed a cut of 5 per cent. This well looks as though it might show a substantial increase after it cleans up. On a production test it made 70 bbls. of 18.8 gravity oil, which showed a cut of 5 per cent. This well looks as though it might show substantial increase after it cleans up. On the Torrance property, the company finished two pumpers, one of them a fairly good sized well and the other a mediocre one. No. 30, drilled to 3,625 feet, is pumping 30 bbls. of 25.1 gravity oil, while No. 34, brought in from 3,725 feet, is making 315 bbls. of clean 21.2 gravity oil. The latter has since sanded up, however, and will require a cleanout job. No. 24 Torrance is running in a 4½-inch oil string and should be bailing within a day or so.

The Superior Oil Co.'s latest completions were Nos. 30 and 32, on the Torrance lease. The former was good for 1,072 bbls., while the latter is listed as a 1,086-bbl. well. Both are flowing through ¾-inch beans, the gravity in each case being 20.9 degrees. No. 30 Torrance was drilled to 3,839 feet, while No. 32 Torrance was finished at 3,829 feet. The Fullerton Oil Co. brought in the second producer on its Cotton fee lease when No. 2, an offset to the Chanslor-Canfield Midway Oil Co.'s No. 13 Del Amo, was put on production. No. 2 Cotton, finished at 3,735 feet, is credited with an initial production of 535 bbls. of clean 24.8 gravity oil. The company's first two wells on this lease indicate that the property should be a productive one, at least the northern part.

Other Completions

The International Drilling & Engineering Co. did not expect a flowing well in its No. 4 Wermick and it was accordingly put on the beam at 3,838 feet. When this well started off two weeks ago it was pumping nearly all water, but it has cleaned up to some extent during the past few days and is pumping 120 bbls. of 20.1 gravity oil, which is cutting 12 per cent. It is possible this cut may be substantially reduced after the well has been on production a week or two. Seiby & Root were only successful in securing a 120-bbl. pumper when their well No. 7 was brought in. It was drilled to 3,780 feet and is producing 22.8 gravity oil, cutting 2 per cent.

The Sentinel Oil Co. completed a 300-bbl. well by bringing in No. 7 Joughin after drilling it to 3,830 feet. The oil is clean and tests 24.1 degrees. Dean & Collins were successful in securing a water shutoff in their well No. 1, after two attempts, and are drilling ahead at 3,650 feet in a hard sand shale with good prospects for an early completion. Water trouble still continues to bother the Standard Oil Co.'s No. 1 Ellinwood, and while it may be edgewater, the company is plugging back in the hope that it may be bottom water. The McKeen Drilling Co. completed No. 4 Campbell at 3,780 feet during the latter part of the week and put it on the beam. It started off pumping only a small quantity of oil, but it is believed will improve after several days of pumping. The Standard Oil Co. finished two fairly good pumpers on its Marble fee lease. No. 9, the smaller of

(Continued on Page 94)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Tuxpanoil, June 12, New York, crude	81,429
H. M. Storey, June 13, New York, crude	104,945
Aladdin, June 13, New York, crude	77,440
Agwisea, June 13, New York, crude	87,290
Dixie Arrow, June 14, New York, crude	78,961
Samuel Q. Brown, June 14, New York, crude	74,815
Coastwise	
Lubrico, June 9, Richmond, crude	85,102
S. C. T. Dodd, June 10, Point Wells, refined	74,118
Los Alamos, June 10, Seattle, refined	34,911
Los Angeles, June 11, Martinez, crude	75,389
Mericos H. Whittier, June 12, Portland, fuel	70,934
Lubrico, June 13, Richmond, crude	87,712
Los Angeles, June 15, Martinez, crude	76,481
Exports	
Silver Shell, June 11, Shanghai, refined	60,472
Vistula (D. F. S.), June 12, Montreal, crude	96,460
Santa Maria (Br.), June 12, Chile, fuel	80,365
Emedio, June 12, England, refined	72,816
Ondo (Jap.), June 15, Japan, fuel	60,931
From San Francisco	
Wm. F. Herrin, June 9, Seattle, fuel	51,120
J. A. Moffett, June 9, Point Wells, fuel	63,124
Charlie Watson, June 10, Point Wells, refined	15,690
R. J. Hanna, June 14, Honolulu, fuel	79,504
El Segundo, June 14, Point Wells, refined	31,715
From Port San Luis	
Oleum, June 11, Oleum, fuel	33,095
Argull, June 12, Santa Rosalia, fuel	30,715
Coalinga, June 13, Oleum, fuel	71,960
Utacarbon, June 14, Pearl Harbor, fuel	79,409

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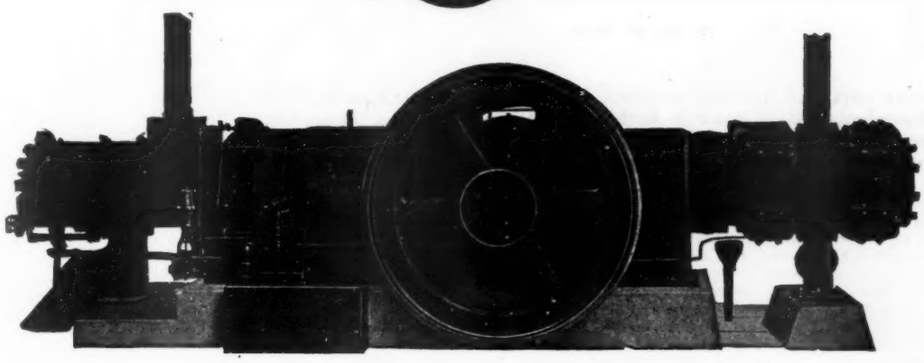

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North-Central Texas Field

By Dan F. Dugan

Drilling being curtailed in many sections. Nearly all major companies and larger independents reduce work in Archer and Wichita counties. Texas Co. extends the Carson County Field mile east. Conway Bros.' wildcat in Callahan looks promising. New depth producing formation in Stephens County.

FORT WORTH, Texas, June 23.—Production reported for the past week amounted to 129,250 bbls. as against 128,160 bbls. for the previous week, an increase of 910 bbls. daily. The table for the week shows gains in the Iowa Park, Stephens and Eastland County districts. Decreases were made in Burkburnett, Electra and the wildcat territories. The gains were: Iowa Park, 1,665; Stephens County, 520, and Eastland County, 80 bbls. daily. Losses from Burkburnett were 425, Electra, 430, and the wildcat pools 500 bbls. daily.

The past week has been an unusually quiet one in this territory taken as a whole. Drilling has been curtailed in most sections and there is a tendency to stop work until conditions become normal. In Archer and Wichita Counties some of the operators are slowing down their field work while others are going ahead with the old time vigor. Nearly all of the major producing companies and a majority of the larger independents have cut work on their leases at least 75 per cent, but the smaller operators continue to rush their work without any regard to the effect it may have on the industry's future.

The prorating program some of the larger pipe line companies put under way, and the lack of demand for production seems to have had very little effect on operations. A few wells were closed down, but this has been offset by the spudding in of others. Unrestricted drilling has all but demoralized the oil industry in Archer County.

At present, especially in the Archer County Field, at least 30 wells are producing which have no pipe line connections, the major pipe lines absolutely refusing to make a connection, with the result that field storage is filled to overflowing, with no demand for the output.

The deeper producing sections completed their usual quota of tests during the week. A majority of these completions were disappointments. The largest producer reported was the Rochelle and others' No. 1 Echols in Stephens County, showing 250 bbls. initial at 3,190 feet.

The Eastland County district reported one gasser of importance, Clayton and others' No. 1 Amis, which is gauging 11,000,000 feet daily at 3,225 feet. Mitchell County has a small well in Sloan and others' No. 4 Smart, which is showing 150 bbls. daily at 3,000 feet.

In Stephens County a semicompletion, Marchbands and others' No. 1 Hudspeth is attracting some attention. It is swabbing 100 bbls. daily from a sand at 2,500 feet. This is a new depth producing formation in that territory; offsetting production is found in the gray lime around 3,150 feet.

There was a little flurry in the Callahan-Eastland County line district caused by the discovery of paying production by Conway Brothers and others in their No. 1 Pickett, wildcat, two miles south of the recent half mile extension opened by J. L. McMurray on the Newton tract. The new well has not been drilled into the pay and was shut down the moment the sand was touched that a liner might be run to shut off a cave in a few feet of open hole. Oil is said to be standing to within 300 feet of the top as this work progresses and a larger well than is usual in that field is generally predicted. The pay was found at 1,300 feet, the depth of many wells in the proven area.

In the recently opened east extension, Mahlstedt & Mook are reported on the pay at 1,240 feet in No. 1 Newton offsetting the discovery well of J. L. McMurray on the west. Several hundred feet of oil is reported standing in this well which is waiting on storage.

Archer County Decrease

There was a small decrease in drilling development during the past week. There was the usual number of producing completions, many new locations were made, new tests spudding in all parts of the county and the promise of new territory was the grist of another active week in Archer County.

Of special interest in the wildcat districts was the action of the Brader and others' No. 1 Farmer, W. M. Baker survey, which is showing for 100 bbls. from a sand at 1,260 feet, a new depth for that part of the county. The discovery is half a mile northwest of The Texas Co.'s test on Swarteat survey, which is down at 1,252 feet, after some promising indications.

Other semicompletions of interest are the Griswold Oil Co.'s No. 5-F Wilson, swabbing 300 bbls. daily at 1,600 feet and the R. and F. Oil Co.'s No. 1 Nichols swabbing 250 bbls. at 1,615 feet.

In the Swastika Field Golding and others' No. 1 Goldsmith cored into the sand at 1,342 feet. Casing has been set and the hole cemented preparatory to drilling in.

In the north section of the field the Sun Oil Co.'s No. 1 Farmer, Bell County school land, cored 3½ feet into a sand and is preparing to swab at 1,480 feet.

A total of 28 completions was reported for the week, 20 producers and 8 dry holes. The largest initial producer among the completions was Murchison and others' No. 2-B White, swabbing 310 bbls. daily at 1,605 feet.

Wichita County Quiet

The past week was a quiet one in the several oil fields of Wichita County. Drilling showed a decrease in comparison with the previous week due to the depressed conditions of the market and an increase in the crude in storage. Several good producers were compelted. A few new locations were made, but it is doubtful if any will drill until conditions show some improvement.

The districts along the Wichita River and north of Beaver Creek furnished the larger producing wells, most important being the Underwood Drilling Co.'s No. 2 McCarty, 145 bbls. at 1,685 feet. The Burnett Ranch Oil Co.'s (formerly Maer and Staniforth) No. 1 Burnett, 240 bbls. at 1,575 feet and the Petroleum Production Co.'s No. 2-A Allen, 155 bbls. at 1,625 feet. The most important semicompletion is the United Central Oil Corp.'s No. 1 Nance showing estimated 250 to 400 bbls. daily at 1,660 feet.

It is reported from Panhandle, Carson County, that several tanks are completed and others under construction to store oil from the Plains Pipe Line Co.'s 20-mile line between the Carson-Hutchinson County producing field and the railway at Panhandle. The Plains line is complete with the exception of a pumping plant which is about finished. More than 120,000 bbls. of crude is now stored in the field and wells are pinched in due to inadequate storage facilities. This condition will be relieved by the Plains line to Panhandle and the Pantex Pipe Line Co.'s 45-mile line to Amarillo now under construction.

Drilling into the pay at 3,040 feet, The Texas Co. has extended the Carson County Field more than a mile to the east. The new well is in the northwest of Section 108, Block 5, Burk Burnett lands. The flow, when encountered, went over the crown block and was immediately shut in. Potential production of the new Texas well is unknown, though oil men decalre it acted much like The Texas Co.'s No. 1 Burnett, two miles northwest which has produced as high as 1,200 bbls. a day and is now pinched in due to lack of storage.

Burkburnett-Hirschl

Completions: Couch and others No. 2 Donohoe, 35 bbls. at 1,315 feet; Grace Oil Co.'s No. 2-B Daniels, 5 bbls. at 585 feet; Gulf Production Co.'s No. 2 Martin, dry at 1,815 feet; Langford and others' No. 9 Langford, 70 bbls. at 1,825 feet; Magnolia Petroleum Co.'s No. 13 Dodson, 5 bbls. at 1,210 feet.

Drilling: Ascott and others' No. 1 Roller, running 5⅛-inch casing at 1,510 feet; Burk Cameron Oil Co.'s No. 10 Foster, fishing for drill pipe at 1,350 feet; Clark and others' No. 7-A Ward & Todd, cleaning out on top of oil sand at 1,777 feet; Constantin Refining Co.'s No. 1 Roberts, drilling at 1,425 feet; Grace Oil Co.'s No. 3-B Daniels, rigging to pump and test oil sand at 1,300 feet; Harvey Oil Co.'s No. 20 Ruyle, fishing for drill pipe at 1,245 feet; Hanks and others' No. 1 Roller, drilling at 1,015 feet; Hunter and others' No. 1 Musgrave, drilling in blue shale at 1,360 feet; No 2 Bailey, shut down for storage on top of oil sand at 1,321 feet; Humble Oil & Refining Co.'s No. 29 Surrein, showing 20 bbls. of oil daily from sand at 1,690 feet; Langford and others' No. 10 Langford, drilling in sand showing oil at 1,815 feet; Magnolia Petroleum Co.'s No. 6 Treece, drilling in rock at 1,485 feet; Oil Investment Co.'s No. 1 Roller, drilling in shale at 1,025 feet.

Wichita-Electra

Completions: Humble Oil & Refining Co.'s No. 2-B Burnett, 20 bbls. at 1,590 feet; Lanning and others' No. 4 McCarty, 25 bbls. at 1,240 feet; Burnett Ranch Oil Co.'s No. 1 Burnett, 240 bbls. at 1,575 feet; John O'Neil's No. 1 Burnett, 35 bbls. at 1,580 feet; Texhoma Oil & Refining Co.'s No. 5-A Burnett, dry at 1,955 feet; Underwood Drilling Co.'s No. 2 McCarty, 145 bbls. at 1,690 feet; United Production Co.'s No. 4 Jennings, 30 bbls. at 1,800 feet; Waggoner and others' No. 1 Jeff Waggoner, dry at 1,655 feet; Doctor Wallace's No. 1 Fassett, dry at 2,010 feet; Art and others' No. 1 Munger, dry at 1,805 feet; Jones and others' No. 1 Hodge, dry at 1,860 feet; Petroleum Production Co.'s No. 2-A Allen, 155 bbls. at 1,625 feet.

Wichita-Electra Drilling

Drilling: The Texas Co.'s No. 45 Skinner, cleaning out and setting casing on bottom at 1,695 feet; No. 294 Waggoner, drilling sand at 1,115 feet; No. 295 Waggoner, drilling in sandy shale at 1,300 feet; Adams and others' No. 1 Wigley, drilling at 450 feet; Apple and others' No. 1-B Jennings, showing 20 bbls. daily production from sand at 1,790 feet; No. 4 Jennings, drilling in shale at 1,510 feet; Bowen and others' No. 1-B Fasset, bailed dry sand at 915 feet.

Buffalo Tex Oil Co.'s No. 5-B Douglas, drilling at 520 feet; Burkland and others' No. 1 Burnett, at 1,200 feet; Burnett Ranch Oil Co.'s No. 2 Burnett, bailing to clean out at 1,367 feet; Camp Oil & Gas Co.'s No. 10-B Douglas, swabbing 18 bbls. an hour at 1,950 feet; Carter and others' No. 4 Fisher, cleaning out at 1,575 feet; Carter and others' No. 1 Burnett, drilling at 320 feet; Culberson and others' No. 25 Jeff Waggoner, fishing for bailer on top of oil sand at 1,503 feet; Douglas and others' No. 3-A Jennings, fishing for tools at 520 feet; Evans and others' No. 1 Fisher, 200 feet of oil in hole and rigging to pump and test sand at 700 feet; Gulf Production Co.'s No. 10 Jennings, 200 feet of oil in hole and bailing sand at 1,805 feet; No. 61 Miller, underreaming 5⅞-inch casing at 1,165 feet; Humble Oil & Refining Co.'s No. 1-C Jeff Waggoner, drilling in shale at 1,530 feet; No. 16-A Douglas, drilling at 1,650 feet.

Magnolia Petroleum Co.'s No. 36-A Waggoner, drilling in rock at 1,455 feet; No. 2 Pere Waggoner, drilling without any oil showing at 2,185 feet; Panhandle Oil & Refining Co.'s No. 4 McCarty, 300 feet of oil and salt water in hole from sand at 1,790 feet; John O'Neil's No. 2 Burnett, drilling at 1,370 feet; Ryan Petroleum Co.'s No. 20 Nance, cleaning out and flowing oil by heads from sand at 1,665 feet; No. 21 Nance, drilling at 1,450 feet; Rio Bravo Oil Co.'s No. 7-E Waggoner, drilling in sand showing oil at 1,930 feet; Stacy and others' No. 1-B Burnett, drilling in shale at 1,580 feet; Texhoma Oil & Refining Co.'s No. 2-B Burnett, drilling at 1,150 feet; Underwood Drilling Co.'s No. 3 McCarty, bailing oil sand at 1,785 feet; United Production Co.'s No. 3 Fouch, drilling at 1,400 feet; United Central Oil Corp.'s No. 1 Nance, drilling in oil sand at 1,680 feet; No. 6 Nance, fishing for bit at 1,630 feet; Doctor Wallace's No. 2 Fassett, drilling at 200 feet; Campbell and others' No. 1 Chilson, at 1,665 feet; Cline Oil Co.'s No. 1 Allen, bailing and testing oil sand at 1,725 feet; Dee and others' No. 1 Mangold, drilling at 300 feet; Electra Gulf Oil Co.'s No. 3 Mrs. Murray, bailing and testing sand showing oil at 1,700 feet; No. 5 Mrs. Murray, drilling at 1,225 feet; Gherke and others' No. 1 Avis, showing estimated around 65 bbls. a day production below 1,750 feet; Harvey and others' No. 1 Peeler, drilling at 1,240 feet; Hill and others' No. 7 Overby, drilling at 700 feet; Humble Oil & Refining Co.'s No. 1 Allen, preparing to pump and test oil sand at 1,660 feet; K. M. A. Oil Co.'s No. 1 Allen, drilling in brown shale at 1,020 feet.

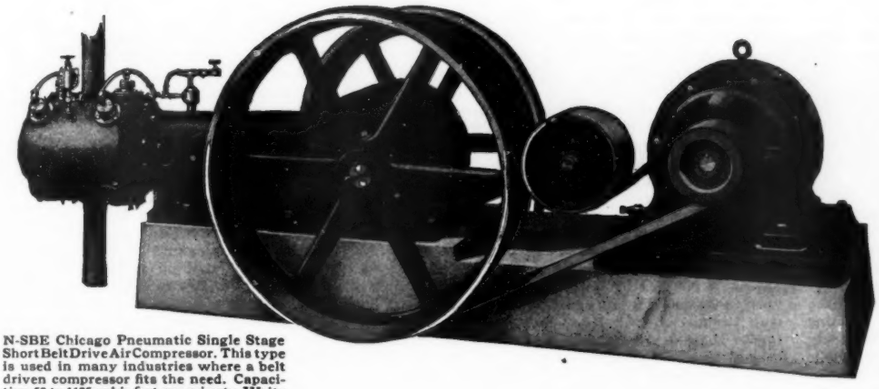
Kruger and others' No. 5 Allen, drilling at 1,100 feet; Moore and others No. 2 Allen, setting 6⅝-inch casing at 1,000 feet; Petroleum Production Co.'s No. 1-A Allen, bailing and testing Petroleum Production Co.'s No. 1-A Allen, bailing and testing oil sand at 1,760 feet; No. 3-A Allen, drilling at 1,200 feet; No. 4-A Allen, at 1,500 feet; No. 2 Maer, bailing and testing oil sand at 1,770 feet; Underwood Drilling Co.'s No. 3 Maer, drilling at 700 feet; United Central Oil Corp.'s No. 1 Murray, repairing boiler at 500 feet.

Wilbarger County

Drilling: Cooke and others' No. 5 Waggoner, drilling in oil sand at 1,530 feet; Magnolia Petroleum Co.'s No. 45 Sumner, drilling in shale at 400 feet; Pigg and others' No. 1 Davis, drilling in rock at 320 feet; South Vernon Oil Co.'s No. 1 Richardson, fishing job at 1,255 feet; Thelma Wells and others' No. 1 Wharton, setting 10-inch casing at 1,000 feet.

Archer County

Completions: Atlantic Oil Co.'s No. 1-A Wilson, 30 bbls. at 1,403 feet; same



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*Boston	*Detroit	*Minneapolis	*Pittsburgh	*Seattle	Bombay	Christiania	Helsingfors	London	*Montevideo	*Rio de Janeiro	Seoul	Tokyo
*Chicago	El Paso	*New Orleans	Richmond	*St. Louis	Brussels	Dairen	Honolulu	Manila	*Montreal	Rotterdam	Shanghai	*Toronto
*Cincinnati	Houston	*New York	Salt Lake City	Tulsa	*Buenos Aires	Durban	Johannesburg	Milan	Osaka	Santiago	Tampico	*Vancouver
*Cleveland												*Winnipeg

Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada
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C-129

BOYER PNEUMATIC HAMMERS · · LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS · · VACUUM PUMPS · · PNEUMATIC HOISTS
GIANT OIL AND GAS ENGINES · · ROCK DRILLS · · COAL DRILLS

CHICAGO PNEUMATIC

The Compressor with the Simplate Valve

company's No. 5-A Wilson, 15 bbls. at 1,421 feet; Cement Petroleum Co.'s No. 1 White, 15 bbls. at 1,585 feet; Darc and others' No. 1 Ferguson, 25 bbls. at 1,734 feet; Donovan and others' No. 2 White, dry at 1,654 feet; same company's No. 3 White, 180 bbls. at 1,625 feet; Franklin and others' No. 4 Parrish, dry at 1,634 feet; same company's No. 7 Parrish, 40 bbls. at 1,612 feet; Griswold Oil Co.'s No. 4-F Wilson, 75 bbls. at 1,599 feet; Gulf Production Co.'s No. 3 Nichols, 90 bbls. at 1,568 feet; same company's No. 4 Nichols, 85 bbls. at 1,574 feet; same company's No. 1 Siegle, 90 bbls. at 1,579 feet; Hawkins and others' No. 5 Mrs. Carter, 40 bbls. at 1,380 feet; Hill and others' No. 1 K. & K., dry at 1 823 feet; Humble Oil & Refining Co.'s No. 1 Wilson, 140 bbls. at 1,587 feet; Jones Oil Co.'s No. 9 Wilson, 25 bbls. at 1,624 feet; Kentucky Oil Corp.'s No. 15 Wilson, 20 bbls. at 1,576 feet; Murchison and others' No. 1 Brown, dry at 1,750 feet; same company's No. 2 Coody, dry at 1,652 feet; same company's No. 2-B White, 310 bbls. at 1,617 feet; Panhandle Oil & Refining Co.'s No. 1 Orton, 40 bbls. at 1,586 feet; Riner & Bailey's No. 6 Wilson, 100 bbls. at 1,620 feet; same company's No. 8 Wilson, 175 bbls. at 1,622 feet; Tarver Oil Co.'s No. 2 Baume, dry at 1,860 feet; Stock and others' No. 1 Wilson, dry at 1,650 feet; Strong and others' No. 1 Hazlewood, dry at 1,843 feet; Verschoyle and others' No. 7 Wilson, 65 bbls. at 1,580 feet; Woodburn Oil Corp.'s No. 2-B Wilson, 30 bbls. at 1,596 feet.

Archer County Drilling

Drilling: Andrade and others' No. 1 Coffield, drilling in shale at 1,050 feet; Archer Oil Corp.'s No. 2 Robertson, rigging to swab and test oil sand at 1,410 feet; Atlantic Oil Co.'s No. 3 Parrish, set and cemented casing at 1,575 feet; No. 4 Parrish, drilling at 1,300 feet; No. 2-A Wilson, Block 31, drilling in shale at 1,380 feet; Baldwin and others' No. 1 White, setting 6⅝-inch casing at 1,645 feet; Brader and others' No. 1 Farmer, showing estimated 100 bbls. daily production and standardizing at 1,280 feet; Bridwell and others' No. 2 Wilson bailing sand showing oil at 1,600 feet; Burns and others' No. 1 Coffield, drilling at 1,100 feet; Camp Oil & Gas Co.'s No. 11 Wilson, shut down for orders on top of oil sand at 1,600 feet; Cato and others' No. 1 Veasey, drilling at 1,020 feet; Chambers and others' No. 1 Andrews, bailing around 5 bbls. a day from sand at 925 feet.

Clark and others' No. 1 Turbeville, setting 6⅝-inch casing on top of oil sand at 1,025 feet; Comet Petroleum Co.'s No. 2 White, drilling at 1,450 feet; Corlett and others' No. 1 Crawford, drilling in blue shale at 1,650 feet; Creath and others' No. 1 Hawkins, drilling at 200 feet; Crump and others' No. 1 Parkey, drilling in shale at 1,380 feet, Davy and others' No. 3 White has 300 feet of oil in hole and drilling at 1,448 feet; Duke and others' No. 1 Herron, drilling at 375 feet; The Texas Co.'s No. 1 Abercrombie, drilling hard white sand at 1,315 feet; No. 1 Graham, preparing to bail and test at 1,443 feet; No. 1 Key, drilling in gray lime at 1,770 feet; Empire Gas & Fuel Co.'s 16-C, 17-C, 18-C Wilson, preparing to pump and test oil sands below 1,615 feet; Franklin and others' No. 5 Parrish, bailing and testing sand showing oil at 1,590 feet; No. 6 Parrish, will pump sand showing oil at 1,600 feet; Gherke and others' No. 1 Logan, drilling at 450 feet; Graham and others' No. 5-B Wilson, drilling at 1,100 feet; Griswold Oil Co.'s No. 5-F Wilson, swabbed 300 bbls. in 24 hours from sand at 1,600 feet; Gulf Production Co.'s No. 2 Siegler, drilling in shale at 1,447 feet; Hawkins and others' No. 6 Mrs. Carter, drilling at 500 feet; Hobbs and others' No. 1 Wright, drilling in shale at 1,290 feet; Holmes and others' No. 1 Wilson, drilling at 1,500 feet; Humble Oil & Refining Co.'s No. 1 Jones, drilling in shale at 600 feet; No. 2 Wilson, drilling at 1,325 feet; Humphrey and others' No. 2 White, drilling in soft rock at 1,010 feet; Jeffries and others' No. 1 Parrish, resetting 6⅝-inch casing at 1,670 feet; Johnson and others' No. 1 Miller, drilling in shale at 1,635 feet; Jones and others' No. 1 Wilson, drilling at 1,380 feet.

Bailing and Testing

Kentucky Oil Corp.'s No. 1 Wilson, Block 26, bailing and testing sand showing oil at 1,620 feet; Kinney and others' No. 1 Porter, drilling at 1,590 feet; Litchfield and others' No. 4 Miller, drilling in shale at 900 feet; Magnolia Petroleum Co.'s No. 3 Coffield, 900 feet of oil in hole and drilling at 1,395 feet; Major Oil Co.'s No. 3 Turbeville, showing estimated at 15 bbls. production and drilling sand at 1,040 feet; McCarty Oil Co.'s No. 2-B Wilson, drilling shale at 1,500 feet; No. 3-B Wilson, drilling in rock at 1,250 feet; Miller Brothers' No. 1 Wilson, drilling in soft rock at 960 feet; Moore and others' No. 2 Wilson, drilling in shale at 1,290 feet; Murchison and others' No. 2 White, preparing to pump and test sand showing oil at 1,590 feet; No. 5-B White, drilling at 1,465 feet; Nantz Oil Co.'s No. 1 Kots, drilling at 1,550 feet; Chase and others' No. 1-B White, reaming hole, sand showing oil at 1,672 feet; No. 1 Wilson, Block 40, hole full of oil and drilling at 1,396 feet; Panhandle Oil & Refining Co.'s No. 2 Orton, drilling in shale at 600 feet; Petroleum Producing Co.'s No. 1 Robertson, bailing and testing oil sand at 1,468 feet; Waite Phillips' No. 1 Chancellor, drilling in rock at 990 feet; No. 1 Wilson, drilling in mud at 245 feet; Prairie Oil & Gas Co.'s No. 7-A Wilson, swabbing 15 bbls. daily from sand at 1,580 feet; R. & J. Oil Co.'s No. 1 Nichols, swabbed 250 bbls. in 24 hours from sand at 1,618 feet; Riner and others' No. 9 Wilson, Block 29, bailed dry sand at 1,620 feet; Scott and others' No. 1 Farmer, drilling at 1,450 feet; Shamrock Oil Co.'s Nos. 2 and 4 Campbell, shut down for pipe line connections at 1,340 feet; same company's Nos. 3, 7, 7-B, 2-D, 3-D Richardson, shut down for pipe line connections. Sheldon and others' No. 1 Ward, drilling at 920 feet; Southwestern Oil & Refining Co.'s No. 1 Turbeville, drilling in rock at 1,970 feet; Staley and others' No. 3-C Wilson, drilling at 1,400 feet; Sun Oil Co.'s No. 5 Farmer, standardizing on top of oil sand at 1,475 feet; Sunshine State Oil & Refining Co.'s No. 1 Reilly, drilling at 1,400 feet; Tucker and others' No. 3 Carter, drilling in shale at 1,480 feet; White Oil Corp.'s No. 2 Wilson, Block 29, drilling at 1,660 feet; Windham and others' No. 1 Anderson, setting 6⅝-inch casing at 903 feet; Woodburn Oil Corp.'s Nos. 3-B, 6-B, and 7-B Wilson, rigging to swab and test sand at 1,390 feet; Young Brothers' No. 1 Long, drilling at 1,620 feet.

Young County

Drilling: Carter and others' No. 1 Rubinkoneig, fishing job at 4,175 feet; Eagle Creek Oil Co.'s No. 1 Eagan, spudding; Foster and others' No. 2 Mahoney, drilling in shale at 3,820 feet; Holcomb and others' No. 1 Bullock, drilling in soft rock at 1,205 feet; Keener and others' No. 1 Bashara, drilling in hard rock at 1,015 feet; McGuire and others' No. 1 Carter, drilling at 1,900 feet; McGarr and others' No. 1 Johnson, drilling at 610 feet; Monroe Producing Co.'s No. 1 Vance, running 8¼-inch casing at 1,665 feet; Miller and others' No. 1 Hume, drilling in rock at 1,175 feet; Mutual Oil Co.'s No. 12 Driver, drilling at 675 feet; Nine Hundred Oil Co.'s No. 2 Benson, fishing at 680 feet; Peter Oil Co.'s No. 6 Kemp, rigging to pump and test oil sand at 1,095 feet; Seaboard Oil & Gas Co.'s No. 5 Hughes, drilling at 2,810 feet; States Oil Corp.'s No. 1 fee, drilling in rock at 1,865 feet; Union Oil Co.'s No. 1-A Keathley, drilling in blue shale at 1,850 feet.

Stephens County

Completions: Rochelle and others' No. 1 Echols, 250 bbls. at 3,190 feet; Empire Gas & Fuel Co.'s No. 7 Wallace, 25 bbls. at 1,820 feet; Haile and others' No. 3 Jones, 100 bbls. at 3,170 feet; Mahlstedt & Mook Oil Co.'s No. 3 Bruce, 125 bbls. at 2,120 feet; Quakins Petroleum Co.'s No. 9 Harmon, 30 bbls. at 2,063 feet; Swensondale Oil Co.'s No. 1 Herrington, dry at 3,330 feet.

Drilling: Brown and Co.'s No. 1 Hudspeth, drilling in brown shale at 1,245 feet; Critten and others' No. 3 Todd, drilling in hard rock at 2,270 feet; No. 5 Todd, drilling at 1,010 feet; No. 2 Cunningham, drilling in shale at 1,400 feet; No. 3 Cunningham, drilling at 550 feet; Curry Pool Oil Co.'s No. 1 Williams, running 5-inch casing and cleaning out at 3,210 feet; Ivan Petroleum Co.'s No. 2 Martin, drilling in black lime at 3,400 feet; Liner and others' No. 2 Brown, running 10-inch casing at 905 feet; No. 1 Richardson, spudding. Marchbands and others' No. 1 Hudspeth, swabbing 100 bbls. daily at 2,500 feet; Mid-Kansas Oil & Gas Co.'s No. 12 Hill, drilling in soft rock at 2,760 feet; No. 13 Hill, drilling at 2,460 feet; No. 5 Hill, fishing for tools at 2,385 feet; No. 2 Lee, showing oil and gas from gray lime and drilling at 3,220 feet; No. 2 Lowe, drilling at 2,010 feet; Pierce and others' No. 1 Crudington, underreaming 6-inch casing at 3,005 feet; Prairie Oil & Gas Co.'s No. 15 Atkins, drilling by tools at 3,260 feet; No. 1 Caldwell, drilling in brown shale at 870 feet; Brown & Co.'s No. 4 Brown, running 6-inch casing at 3,205 feet; No. 1 McClenney, drilling by 5-inch casing at 3,790 feet; Foster and others' No. 2 Gardner, drilling by tools at 3,223 feet; Raney and others' No. 1 Hamil was shot, flowed 30 bbls. and being cleaned out at 3,300 feet; Rochelle and others' No. 2-A Sweeney, drilling at 1,200 feet; The Texas Co.'s No. 20 Black, hole full of water and drilling at 2,850 feet; Texas Pacific Coal & Oil Co.'s No. 5 Rodgers, drilling at 2,625 feet; No. 6 Rogers, drilling at 1,220 feet; Walker & Caldwell's No. 10 Walker & Caldwell, running 5-inch casing and cleaning out at 3,025 feet; Walker and others' No. 1 Walker, drilling at 1,580 feet; No. 2 Walker, showing some oil and drilling at 1,815 feet; Humble Oil & Refining Co.'s No. 2 Jones, drilling in black line at 3,670 feet; Lewis Oil Co.'s No. 2 Stoker, drilling

(Continued on Page 66)

CARRIERS BY PIPE LINE REPORTING TO THE INTERSTATE COMMERCE COMMISSION
Selected Financial and Opegating Data for the Calendar Year 1923

Name of Company and States or Fields served—	Miles of line operated.	Investment in pipe lines.	Other investments.	Total current assets.	Capital stock.	Total current liabilities.	Pipe line operating revenues.	Pipe line operating expenses.	Pipe line operating income.	Pipe line Net income.	Dividends declared. amount
Buckeye Pipe Line Co. (Ohio)	6,455.00	18,256,952	3,519,273	1,485,818	10,000,000	542,249	4,398,213	2,948,797	898,499	1,078,245	1,350,000
Crescent Pipe Line Co. (Pennsylvania)	274.03	1,080,377	902,125	181,186	1,500,000	64,062	236,086	204,706	*7,762	44,464	67,500
Crude Oil Transit Co. (Kansas and Oklahoma)	22.43	111,867	.....	53,790	1,500	23,855	67,365	30,652	36,713	34,761	.....
Cumberland P. L. Co., Inc. (Ky. & Appl. Field)	1,249.50	4,638,577	2,227,762	425,727	3,000,000	23,869	1,603,878	764,244	663,908	776,462	300,000
Empire P. L. Co. (Kans., Okla., Texas. & Ark.)	963.00	10,150,621	238	120,126	500,000	3,432,856	2,427,245	1,227,402	1,130,517	1,252,674	275,000
Eureka P. L. Co. (W. Va. & Appalachian Field)	4,718.99	10,793,194	1,945,035	642,940	5,000,000	383,289	2,445,207	1,910,096	220,701	315,082	550,001
Gulf Pipe Line Co. (Texs)	1,930.37	24,911,888	1,960,440	13,733,579	3,500,000	23,887,688	6,501,983	4,965,788	1,320,236	571,609	.....
Gulf Pipe Line Co. of Okla. (Kansas & Okla.)	1,311.60	9,228,983	.....	1,076,553	1,000,000	115,165	4,104,206	1,900,038	2,087,853	2,059,331	.....
Humble Pipe Line Co. (Texas	1,579.69	18,227,720	1,953,883	1,947,168	13,000,000	2,467,336	9,473,957	4,335,822	5,020,376	5,003,729	5,500,000
Illinois P. L. Co. (Ill., Ind., Ohio, Wyo. & Mont.)	3,546.02	29,886,211	621,088	3,469,276	20,000,000	88,783	7,445,472	4,128,490	1,663,076	2,224,050	2,200,000
Imperial P. L. Co., Limited (Ohio & Mich.)	179.05	1,210,189	.....	540,041	880,000	215,741	358,094	248,680	74,070	73,244	136,000
Indian Pipe Line Corp. (Ky., Ind. & Ill.)	78.50	1,071,647	1,162	227,534	50,000	134,921	419,953	97,926	322,027	322,267	.....
Indiana Pipe Line Co. (Indiana)	982.00	5,083,474	4,261,857	821,925	5,000,000	389,958	1,760,224	634,932	863,395	1,067,337	200,000
Magnolia Petroleum Co. (Oklahoma & Texas)	2,850.53	29,983,725	219,345 875	60,[illegible]839	180,000,000	10,360,127	7,674,108	5,730,810	1,714,000	8,110,660	8,099,757
Maryland Pipe Line Co. (Maryland & Pa.)	33.35	162,056	1,159,675	138,932	150,600	110,089	39,094	32,755	*434	26,594	21,084
National Transit Co. (Pennsylvania)	3,942.17	8,213,616	8,324,391	1,928,442	6,362,500	154,617	1,917,491	1,572,517	286,501	2,073,071	1,011,000
New York Transit Co. (N. Y. & N. J.)	1,534.00	6,959,110	1,564,681	547,573	5,000,000	256,780	1,255,196	842,741	193,278	296,045	375,000
Northern Pipe Line Co. (Pennsylvania)	696.03	2,979,714	2,946,615	369,389	4,000,000	238,114	561,494	315,332	179,097	342,963	400,000
Oklahoma Pipe Line Co. (Kansas & Oklahoma)	1,235.63	11,608,800	2,047,216	1,039,303	10,000,000	536,014	4,310,351	1,286,586	2,855,495	2831,476	2,500,000
Ozark P. L. Corp. (Okla., Mo. & Ill.)	822.78	11,771,886	.....	1,039,303	10,000,000	536,014	4,310,351	1,286,586	2,855,495	2,831,476	2,500,000
Pierce Pipe Line Co. (Oklahoma & Texas)	281.87	3,019,947	3,133,345	43,709	1,000,000	2,187	107,615	106,059	1,556	*14,840	.....
Prairie Pipe Line Co. (Okla., Kans., Texas, Mo., Iowa., Ill. & Ind.)	10,772.77	79,898,904	6,580,383	29,009,753	81,000,000	2,279,945	30,738,494	12,300,740	15,149,196	15,818,866	6,459,000
Producers & Refiners P. L. Co. (Pennsylvania)	[1]	886,645	.....	198,701	10,000	493,868	.....	73,896	*78,234	21,766	.....
Pure Oil P. L. Co. (Ohio, Pa., W. Va. & Okla.)	2,347.41	2,760,823	105,750	948,730	2,130,000	1,718,930	887,961	930,233	*83,378	*359,472	150,000
Pure Oil P. L. Co.-Pa. (Pennsylvania)	[1]	945,915	143,333	770,441	300,000	968,822	.....	62,593	*79,368	100,632	.....
Shreveport-El Dorado P. L. Co., Inc. (Ark. & La.)	147.67	1,620,856	2,408	391,495	2,500,000	354,236	986,383	454,591	475,189	277,639	1,965,900
Sinclair Pipe Line Co. (Okla., Kans., Texas, Mo., Iowa, Ill., Ind., Neb & Wyo.	5,732.10	39,513,524	32,439,208	4,725,915	28,084,400	9,600,594	9,725,894	7,081,038	2,644,856	2,404,376	230,000
S. W. Pa. P. L. (Pa. & Appalachian Field)	1,682.44	4,163,670	1,338,391	347,599	3,500,000	137,908	900,228	636,613	194,540	268,470	1,000,000
Southern P. L. Co. (Pa. & Appalachian Field)	1,130.96	5,970,849	7,734,656	335,076	10,000,000	901	984,800	551,036	208,409	546,695	.....
[4]Standard Pipe Line Co., Inc. (Ark. & La.)	3,036.29	24,742,450	29,614	7,846,140	25,000,000	95,558	9,511,713	3,462,458	6,049,255	6,437,931	3,500,000
Texas Pipe Line Co. (La., Texas & Ark.)	1,950.64	36,605,680	1,665,495	2,434,641	14,000,000	15,856,513	10,595,173	5,756,369	4,014,468	3,391,368	420,000
Texas Pipe Line Co. of Okla. (Oklahoma)	654.13	7,227,646	624,681	1,138,548	6,000,000	599,002	1,758,661	1,164,608	359,108	404,948	2,500,000
Tide Water Pipe Co., Limited (Ill., Ind., N. J., N. Y., Ohio & Pa.)	2,111.09	11,049,419	48,096	3,211,355	6,250,000	731,284	3,019,273	1,460,863	1,464,151	1,442,724	250,000
Tuscarora Oil Co., Ltd. (N. J. & Pa.)	596.64	6,704,313	45,388	2,480,414	5,000,000	212,232	754,216	689,364	*57,809	210,022	932,700
United States Pipe Line Co. (Pennsylvania)	[5]	624,112	163,460	100,868	1,026,400	5,698	27,993	93,989	*72,265	*57,104	.....
Total	64,759.68	$432,065,360	$305,840,524	$144,264,050	$462,461,500	$76,642,175	$131,212,582	$69,234,319	$52,678,246	$62,639,224	$43,963,010

[3]Deficit.
[1]Operated by Pure Oil Pipe Line Co.—Ohio.
[2]Stock dividend.
[3]Represents dividend on 300,000 shares of common stock without par value.
[4]Report for period January 13 to December 31, 1923.
[5]Ceased operations August, 1923; company in process of liquidation.

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North Louisiana-Arkansas

By M. L. Vaughn

Louisiana shows increase, mainly due to Cotton Valley production now approximately 8,000 bbls. a day. New district has 22 rigs running, five rigging, five derricks and one new location. Johnson and others' No. 1 Burton, Union County, flows 1,200 bbls. J. E. Crosbie's No. 1 Alphin, 600 bbls.

SHREVEPORT, La., June 23.—Production from the Smackover district and other Arkansas fields remains practically unchanged during the past week, the runs averaging 155,735 bbls. a day, but an appreciable increase in Louisiana production is noted, for which the Cotton Valley district is chiefly responsible. Several big wells in the Cotton Valley district ran the production up to approximately 8,000 bbls. a day, most of which is being run to storage, only a fraction of it being taken by the Texas Pipe Line Co., which has the only pipe line to this district. The Standard Oil Co. has finished laying a branch line to Cotton Valley and is now completing the gathering lines through the field. Production for the entire north Louisiana and south Arkansas fields averaged 214,165 bbls. a day, distributed as follows:

North Louisiana	
Bellevue	5,490
Caddo light	11,290
Caddo heavy	2,680
Cotton Valley	6,600
De Soto & Red River	4,585
Elm Grove	885
Haynesville	19,400
Homer	8,100
Total	58,430
South Arkansas	
El Dorado	12,735
Nevada County	1,305
Smackover light	37,070
Smackover heavy	102,310
Stephens	2,315
Total	155,735
Total both fields	214,165
Increase	3,345

Union County Completions

Completions in the Union County area of the Smackover Field numbered 23, with two failures, one gas well, and an aggregate initial production of 8,922 bbls.

Braswell and others completed No. 3 Moore, Section 19-16-15, swabbing 300 bbls. at 2,077 feet.

J. E. Crosbie, trustee, completed No. 1 Alphin, Section 29-16-15, flowing 600 bbls. at 2,069 feet.

Dyer Brothers' No. 2 Neely, Section 1-16-17, made a 40-bbl. pumper at 2,262 feet.

The Gulf Refining Co. drilled to 2,748 feet in No. 1 Hicks, Section 23-16-16, tested dry and was abandoned.

Hollyfield and others got salt water at 2,122 feet in No. 1 Burton, Section 30-16-15, and was abandoned.

The Humble Oil & Refining Co.'s No. 3 Moore, Section 19-16-15, made a 100-bbl. pumper at 2,089 feet.

The Imperial Oil & Gas Co. completed two good pumpers, No. 4 Lawton, Section 7-16-15, making 150 bbls. at 2,105 feet, and No. 1 Smith, Section 29-17-14, making 180 bbls. at 2,200 feet.

Johnson and others completed No. 1 Burton, Section 25-16-16, flowing 1,200 bbls. at 2,102 feet.

Keene & Woolf's No. 1 Bradford, Section 7-16-15, made a 60-bbl. pumper at 2,050 feet.

The Marine Oil Co. completed No. 4 Murphy, Section 15-16-15, pumping 150 bbls. at 2,067 feet.

The Ohio Oil Co.'s No. 2 Murphy, Section 9-16-15, made 20,000,000 feet of dry gas at 2,275 feet.

The Pure Oil Co. completed No. 4 Berry, Section 18-16-15, pumping 30 bbls. at 2,050 feet; No. 1 L. M. Hicks, Section 29-16-15, flowing 500 bbls. at 2,094 feet; No. 5 L. Hicks, Section 20-16-15, flowing 150 bbls. at 2,075 feet; No. 7 L. Hicks, Section 20-16-15, flowing 150 bbls. at 2,085 feet; No. 3 R. J. Hicks, Section 20-16-15, flowing 100 bbls. at 2,056 feet.

Sam Richardson completed No. 3 E. G. Murphy, Section 23-16-15, blowing with air at the rate of 500 bbls. per day at 2,014 feet.

The Standard Oil Co. completed No. 19 Hardy, Section 9-16-15, pumping 37 bbls. at 2,026 feet.

The Sun Oil Co.'s No. 2 Smith, Section 1-16-17, made a 100-bbl. pumper at 2,262 feet.

Sutherland and others completed No. 1 Neely, Section 1-16-17, pumping 90 bbls. at 2,265 feet.

The Texas Co.'s No. 2 Hedgewood, Section 24-16-16, made a 235-bbl. pumper at 2,092 feet.

The Unity Petroleum Co. completed Alphin C-1, Section 24-16-16, flowing 4,000 bbls. at 2,120 feet.

The Vag Oil Co.'s No. 1 Lyon, Section 7-17-14, made a 250-bbl. pumper at 2,140 feet.

Union County Drilling

The Amerada Petroleum Corp. is drilling shale at 1,550 feet in No. 1 Wilson, Section 19-16-15; Arkansas Fuel Oil Co. set 8-inch casing at 1,940 feet in No. 3 Alphin, Section 11-16-15; Beggs and others set 10-inch casing in the second hole in this location at 65 feet in No. 1 Murphy, Section 36-16-16; Bond, trustee, set 10-inch casing at 85 feet in No. 2 Powell, Section 19-16-15.

Caldwell and others are rigging up No. 2 Hancock, Section 25-16-16; Cherokees Petroleum Co. set 6-inch casing at 2,030 feet in No. 1 Burton, Section 25-16-16; J. W. Clark, waiting on standard rig at 2,112 feet, with 28 feet of sand and 300 feet of oil in hole, in No. 1 Alphin, Section 19-16-15; Constantin Refining Co. tested No. 1 Morgan, Section 2-18-16, with show of oil and gas with 18 feet of broken sand at 2,140 feet and bailing fresh water and gas with showing of oil at 2,195 feet; Crawford & Sebastian, rigging up No. 7 Giller, Section 11-16-15, and No. 4 Graves, Section 4-16-15.

J. E. Crosbie, trustee, has derrick up for No. 2 Alphin, Section 29-16-15; Cross and others set 6-inch casing at 2,080 feet in No. 3 Polk & Ezell, Section 18-17-14; Federal Petroleum Co. set 6-inch casing at 2,010 feet in No. 4 Scott, Section 19-16-15; and in No. 4 Smith, Section 18-16-15.

The Gulf Refining Co. is waiting on standard rig with 200 feet of oil and 16 feet of sand in the hole at 2,105 feet in No. 1 Hedgewood, Section 13-16-16, rigging up No. 2 Hedgewood, same section; pulled casing and abandoned No. 1 Hicks, Section 23-16-16; set 6-inch casing at 1,915 feet in No. 11 Murphy, Section 3-16-15; drilling rock at 1,070 feet in No. 20 L. Werner, Section 6-16-16.

Harrell and others are arranging to set 6-inch casing at 2,637 feet in No. 1 Teele, Section 11-19-12; Harris and others set 6-inch casing at 2,047 feet in No. 1 Cook, Section 20-16-15; Holliday, trustee, set 6-inch casing at 2,230 feet in No. 3 Goff, Section 6-16-16, and has derrick up for No. 4 Goff, same section.

Hollyfield and others tested dry at 2,116 feet, and pulled casing and abandoned No. 1 Burton, Section 30-16-15; derrick up for No. 2 Burton, same section.

The Humble Oil & Refining Co. set 10-inch casing at 120 feet in No. 1 Burton, Section 25-16-16; tried to shoot 6-inch at 1,830 feet to make deep test at 2,534 feet in No. 1 Cordell, Section 1-18-14; set 15-inch casing at 42 feet in No. 3 Flenniken, Section 3-16-15; set 6-inch casing at 1,906 feet in No. B-1 Giller, Section 11-16-15; drilling in gumbo at 1,500 feet in No. 2 Hicks, Section 20-16-15; set 6-inch casing at 2,023 fect in No. 4 Moore, Section 19-16-15.

Imperial Oil & Gas Co. is drilling No. 2 Smith, Section 29-17-14, at 910 feet; Kinnebrew and others' 6-inch casing split about 800 feet down and arranging to set 4-inch liner with packer in 29 feet of broken sand at 1,976 feet in No. 2 Williams, Section 3-16-15; Kouri and others lost 6-inch casing and resetting at 2,002 feet in No. 1 Moore, Section 24 16-16; Lanier and others set 10-inch casing at 100 feet in No. 1 Saxon, Section 16-16-16.

Lemond and others have derrick up for No. 1 Terrell, Section 22-18-14; Lion Oil & Refining Co. drilling rock at 1,952 feet in No. 4 Allgulf, Section 17-16-15; set 6-inch casing at 2,009 feet in No. 4 Hedgewood, Section 24-16-16; Livingston and others waiting on standard rig with 42 feet of broken sand and 600 feet of oil in hole at 1,977 feet in No. 5 Roper, Section 3-16-15; Magnolia Petroleum Co. drilling lime at 3,255 feet in No. 1 Smith, Section 2-16-17; set 10-inch casing at 90 feet in No. 1 I. Smith, same section.

Marine Oil Co. temporarily abandoned No. 1 W. C. Murphy, Section 15-16-15, at 2,120 feet; McFarland and others set 8-inch casing at 1,850 feet in No. 3 Graves, Section 3-16-15; Hill Myers and others are bailing to test 35 feet of broken sand and set 6-inch casing at 2,018 feet in No. 3 McKinney, Section 19-16-15; Morris Drilling Co., bailing casing at 1,919 feet in No. 7 Flenniken, Section 5-16-15.

The Natural Gas & Petroleum Co. is drilling gumbo at 2,474 feet in No. 2 Tatum, Section 14-16-16; Ohio Oil Co. has derrick up for No. 1 Scott, Section 19-16-15; and No. 2 Scott, same section.

Page and others are drilling rock at 1,200 feet in No. A-1 Alphin, Section 30-16-16; Phillips Petroleum Co., repairing rig at 2,756 feet in No. 1 Moore, Section 24-16-16.

Pure Oil Co. is drilling No. 5 Berry, Section 20-16-15, at 2,008 feet; set 10-inch casing at 67 feet in No. 1 Davis, Section 17-16-15; waiting on standard rig with 800 feet of oil and 85 feet of broken sand in hole at 2,062 feet in No. 3 Dumas, Section 16-16-15; rigging up No. 3 M. Hays, Section 21-16-15; set 6-inch casing at 2,010 feet in No. 3 F. Hicks, Section 20-16-15; set 10-inch casing at 67 feet in No. 6 L. Hicks, Section 20-16-15; rigging up No. 3 Massey, Section 17-16-15; waiting on standard rig with 6 feet of sand and 1,000 feet of oil in hole at 2,069 feet in No. 1 Morrison, Section 21-16-15; derrick up for No. 1 Lindsey, Section 29-16-15; and No. 8 Smith, Section 24-16-16.

Ramage and others are arranging to test 19 feet of sand at 2,050 feet in No. 4 Hedgewood, Section 24-16-16; set 6-inch casing at 1,990 feet in No. 2 Smith, same section; Ray Drilling Co. set 10-inch casing at 61 feet in No. 4 Hicks, Section 20-16-15; Sam Richardson drilling No. L-2 Lawton, Section 10-16-15, at 1,951 feet; Roxana Petroleum Corp. set 5-inch casing at 1,875 feet in No. 1 C. Flenniken, Section 8-16-15.

W. E. Rutledge, trustee, set 10-inch casing in No. 1 Carruth, Section 7-16-15 and in No. 1 Hodges, Section 1-16-17; Sandford and others set 12-inch casing at 77 feet in No. 4 Berry, Section 5-16-15; Schuller and others drilling No. 1 Henderson, Section 19-16-15, at 1,900 feet and No. 2 Henderson, same section, at 1,970 feet.

Seip and others set 10-inch casing at 85 feet in No. 1 Hedgewood, Section 24-16-16, and set 10-inch casing at 65 feet in No. 2 Hedgewood, same section.

The Standard Oil Co. of Louisiana is drilling shale at 1,790 feet in No. 8 Lingelbach, Section 22-16-15; set 4-inch casing at 2,297 feet in No. 1 J. S. R. Saxon, Section 4-16-16.

Starke and others shut down No. 1 Little, Section 21-19-12, and waiting orders at 2,332 feet; Star Oil Co. set 10-inch casing at 65 feet in No. 2 Burton, Section 25-16-16; Staves Oil Co. is drilling at 2,027 feet in No. 2 Hicks, Section 20-16-15; set 10-inch casing at 85 feet in No. 1 Moore, Section 25-16-16; Sun Oil Co. set 10-inch casing at 68 feet in No. 3 Wilson, Section 19-16-15.

Sure Oil Corp. is arranging to test 30 feet of broken sand at 2,098 feet in No. 3 Smith, Section 24-16-16; set 6-inch casing at 2,019 feet in No. 5 Smith, Section 24-16-16; rigging up No. 7 Smith, same section; Sutherland and others set 10-inch casing in No. 2 Neely, Section 1-16-17; Tarver and others set 10-inch casing at 80 feet in No. 1 Stout Lumber Co., Section 1-16-17.

The Texas Co. is drilling rock at 2,055 feet in No. 6 Cook, Section 21-16-15; drilling gumbo at 1,850 feet in No. 2 Hedgewood, Section 24-16-16; set 10-inch casing at 65 feet in No. 4 Hedgewood, same section; waiting on standard rig with 8 feet of sand and 500 feet of oil in hole at 2,268 feet in No. 1 J. G. Smith, Section 2-16-17.

The Traffic Oil Co. temporarily abandoned No. 1 Goodwin, Section 20-16-14 at 3,026 feet; Umstead and others set 8-inch casing at 1,846 feet in No. 1 Cargile, Section 6-16-14; United Central Oil Corp. rigging up No. 1 Craig, Section 15-16-15.

The Unity Oil Co. set 6-inch casing at 2,012 feet in No. A-6 Alphin, Section 24-16-16; set 10-inch casing at 80 feet in No. C-2 Alphin, same section; arranging to test 16 feet of broken sand at 2,028 feet in No. 1 Burton, Section 23-16-16; Vecino Syndicate set 10-inch casing at 83 feet in No. 2 Burton, Section 25-16-16; Winger and others swabbing to test 15 feet of sand at 2,085 feet in No. 2 Gill, Section 21-16-15; Woodley Petroleum Co. set 10-inch casing at 85 feet in No. 3 Alphin, Section 24-16-16; set 6-inch casing at 2,963 feet in No. 4 Alphin, Section 24-16-16.

Weatherbee and others are arranging to set 2-inch tubing in No. A-2 Rice, Section 6-16-16 and it stands 1,800 feet in oil and 5 feet of sand in hole at 2,244 feet.

Ouachita County Completions

Operations in the Ouachita County area of the Smackover Field resulted in the completion of 18 wells, with an aggregate initial production of 1,410 bbls. and only one failure.

The Arkansas Drilling Co. completed its first well on the Reynolds lease, in Section 24-15-17, flowing 60 bbls. at 2,272 feet.

The Arkansas Invinvible Oil Co.'s Patton B-3, Section 31-15-16, made a 35-bbl. pumper at 2,272 feet.

The Atlantic Oil Producing Co. completed Rowland E-1, Section 20-15-16, flowing 100 bbls. at 2,310 feet.

Bray-Hawthorne got salt water at

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IME WAS when men had no idea that a watch could be anything but a cumbersome and more or less unreliable thing which had to be opened and wound with a key.

Today we have the stem-winder, a beautifully jeweled, balanced, utterly accurate time piece.

The evolution of the tubing and sucker rod hook presents a corollary. There used to be the open, cumbersome, dangerous hook. Today we have the Ratigan Safety Hook, tested beyond any possible demand of actual working conditions, operated with one hand, proof against accident, 100 per cent reliable.

We have with us also, as in the case of the dollar product of the watchmaker's industry, the cheap hook, functioning after a fashion, but not at all the hook for the careful, particular field man.

Note well the illustration above. See how impossible it is for the load to escape by accident. Picture how readily the operator guides and operates the Hook with one hand, leaving the other free for other duties.

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Dreadnaught Rotary Equipment—Complete Cable Tool Equipment—Reid Gas Engines and Powers—Donovan Boilers—Roebling Wire Lines—Whitlock Cordage—F-R Electric Light Plants—Axelson Working Barrels and Sucker Rods—National Transit Steam and Power Pumps—Jones and Laughlin Tubular Goods—Ratigan Beam Hangers, Sure Grips, etc.—Camel Hair Belting—F-R Drilling and Pumping SERVICE Belting—Warren Steam Engines—Johns-Manville Packings—Etc.

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2,546 feet in No. 1 Halford, Section 20-14-16, and was abandoned.

The El Dorado Union Oil Co. completed No. 6 Hughes, Section 21-15-16, flowing 40 bbls. at 2,263 feet.

The Gilliland Oil Co. completed No. 3 La Grone, Section 25-15-17, pumping 40 bbls. at 2,275 feet, and No. 2 W. A. Smith, Section 36-15-17, pumping 80 bbls. at 2,252 feet.

Harris and others completed No. 1 Smith, Section 25-15-17, pumping 25 bbls. at 2,305 feet.

The Houston Oil Co.'s No. 4 Patton, Section 31-15-16, made a 100-bbl. pumper at 2,255 feet.

Hunt and others completed No. 2 Anderson, Section 23-15-17, flowing 40 bbls. at 2,277 feet.

Kouri and others completed No. 1 Wells, Section 24-15-17, making 50 bbls. at 2,280 feet.

The Magnolia Petroleum Co.'s Smith B-7, Section 31-15-16, made a 60-bbl. pumper at 2,250 feet.

The Mulling Drilling Co. completed No. 3 Mullins, Section 27-15-16, pumping 140 bbls. at 2,292 feet.

The Pure Oil Co.'s No. 1 Cunningham, Section 30-15-15, is swabbing 200 bbls. at 2,037 feet.

Sutton and others completed No. 15 Hughes, Section 28-15-16, flowing 140 bbls. at 2,275 feet.

The Texas Co.'s No. 8 Snow, Section 30-15-16, made a 90-bbl. pumper at 2,275 feet; No. 1 Stringfellow, Section 28-15-16, is pumping 30 bbls. at 2,292 feet, and No. 4 Stout Lumber Co., Section 31-15-16, is flowing 80 bbls. at 2,256 feet.

The Sonder State Oil Co. completed No. 5 Anderson, Section 23-15-17, flowing 80 bbls. at 2,272 feet.

Ouachita County Drilling

The Arkansas Drilling Co. set 10-inch casing at 54 feet in No. 2 Reynolds, Section 24-15-17, and has derrick up for No. 3 Reynolds, same section; Arkansas Invincible Oil Co. rigging up No. 8 Patton, Section 31-15-16; Atlantic Oil Producing Co., derrick up for No. C-2 Brierton, Section 24-15-17; bailing to test 28 feet of broken sand at 2,289 feet in No. B-6 Wells, Section 25-15-17.

Bray-Hawthorne have derrick up for No. 1 Copenhaven, Section 13-15-17; No. 1 Halford, Section 20-14-16, tested salt water and pulled casing and abandoned at 2,546 feet; Dr. Clark set 10-inch casing at 65 feet in No. 5 Berry, Section 24-15-17; J. E. Crosbie, trustee, waiting on standard rig with 12 feet of sand and 400 feet of oil in hole at 1,995 feet in No. 1 Berry, Section 33-15-15; Deshko and others sidetracked liner at 1,980 feet in No. 1 T. C. Joyce, Section 34-15-16.

Denver Smackover Oil Syndicate drilling shale at 2,190 feet in No. 2 Stringfellow, Section 20-15-16; Findley & Stookey set packer to cut off salt water at 2,304 feet in No. 1 LaGrone, Section 36-15-17; Forest Oil Co., derrick up for No. 2 Minor, Section 20-15-16.

Gilliland Oil Co., waiting on standard rig with 800 feet of oil and 4 feet of sand in hole at 2,280 feet in No. S-3 LaGrone, Section 25-15-17; drilling gumbo at 2,110 feet in No. 2 McRea, same section; rigging up No. 1 W. A. Smith, Section 36-15-17; derrick up for No. 3 W. A. Smith, same section; set 6-inch casing at 2,232 feet in No. S-2 Wells, Section 24-15-17; derrick up for No. B-3 Wells, Section 24-15-17.

Gray and others set 5-inch casing at 2,225 feet in No. 2 Myar Estate, Section 32-15-16.

Gulf Co. Operations

Gulf Refining Co. tested 4,000,000 feet of gas and 5 bbls. of oil, 60 per cent b.s., and waiting orders with 59 feet of sand in hole at 1,995 feet in No. 2 R. Bennett, Section 33-15-15; waiting on standard rig with 300 feet of oil and 11 feet of sand in hole at 2,312 feet in No. 1 Hardin, Section 28-15-16; set 6-inch casing at 2,206 feet in No. 9 Solmson, Section 29-15-16.

L. K. Hamilton set 6-inch casing at 2,232 feet in No. 2 Smith, Section 36-15-17, and waiting on standard rig with 1,500 feet of oil and 22 feet of sand in hole at 2,274 feet; Herman & Jackson, rigging up No. 1 Shirey, Section 36-15-17; Home Refining Co., fishing for 2-inch wash pipe with 22 feet of sand in hole at 2,238 feet in No. 4 Anderson, Section 36-15-17; Lanier and others, drilling No. 2 Myar, Section 29-15-16, at 1,800 feet.

Leon and others, drilling through liner at 1,975 feet in No. 1 Berg, Section 4-16-15; rigging up No. 2 Patton, Section 32-15-16.

Magnolia Petroleum Co. set liner to test 20 feet of broken sand at 2,283 feet in No. 2 Hardin, Section 20-15-16; drilling No. 3 Hardin, same section, at 1,400 feet; drilling No. B-8 Smith, Section 31-15-16, at 1,100 feet.

Majestic Smackover Syndicate, drilling No. A-2 McElroy, Section 29-15-16, at 2,290 feet; Natural Gas & Petroleum Corp., tested at 2,248 feet with showing of oil, drilled 18 feet deeper, set 3¼-inch liner to test 22 feet of broken sand at 2,266 feet in No. 1 Hughes, Section 28-15-16; R. B. Nelson set 6-inch casing at 2,263 feet in No. 2 Jeffus, Section 26-15-17; J. E. Newton pulled casing and abandoned at 2,404 feet No. 1 E. Bryant, Section 19-15-16.

Owenwood Oil Corp. rigging up No. 3 Snyder, Section 34-15-15; Palmetto Oil Co., swabbing to test 30 feet of broken sand at 2,297 feet in No. 3 Reynolds, Section 25-15-17; Peltier Oil Co., drilling hard sand at 2,280 feet in No. 2 Eagle Mills Lumber Co., Section 25-12-16; Phillips Petroleum Co., rigging up No. 5 Hernsberger, Section 33-15-15.

Ramage and others waiting on standard rig with 900 feet of oil and 29 feet of sand in hole at 2,324 feet in No. 2 Jeffus, Section 25-15-17; Riggs Drilling Co. set 6-inch casing at 2,233 feet and waitng cable tools in No. 2 Myar, Section 29-15-16; J. D. Reynolds set 6-inch casing at 1,943 feet in No. 2 Cramer, Section 22-15-16; Skelly Oil Co., drilling No. 5 Chandler, Section 19-15-16, at 2,263 feet.

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., June 21. — What looks like a new shallow oil field in southwestern Ontario has been opened up in Dunwich Township, Elgin County, about 3½ miles from Dutton, through the drilling on the George Hatton farm, Concession 4 Dunwich, of a well with an estimated flush production of 100 bbls. a day in the Onondaga limestone. The production was secured by the Peace River Development Co., financed by English capital. Drilling started about June 1, and production was encountered in the top of the lime at 375 feet. The deeper lime has apparently not been tested. The field apparently marks a sort of extension of the Dutton shallow field, which was first developed in Dunwich Township about 1896 and still has a small production from the lower horizons in the Onondaga limestone. For some years past there have been intermittent tests in the territory around Iona; and about three years ago the St. Thomas Oil & Gas Co., headed by C. M. Grim, leased considerable territory. Last year this company drilled three wells, which finished as small producers, but have not been pumped steadily; a production of between 5 and 10 bbls. is claimed for each of these wells. The Peace River Development Co. recently took over some of the St. Thomas Oil & Gas Co. acreage and started the Hatton test. The Peace River Development Co. will make locations for two additional tests in the same vicinity; and the St. Thomas Oil & Gas Co. may also do some further drilling. G. E. Willet is in charge of the Peace River Co.'s operations. The Hatton well is now being put in shape for steady production.

New Fort Norman Test

In the Canadian West, Imperial Oil, Ltd., expect to have their drilling crews at Fort Norman, in the Mackenzie district, early in July. Angus Sutherland is in charge of operations there; and drilling will be carried on through the summer. Tronson Draper, western production superintendent for Imperial Oil, Ltd., states that instead of deepening the discovery well, a new hole will be started close to the discovery, and drilled as a deep test of the entire structure at this point. The test will be carried as far down as the drilling equipment and casing now on the ground will permit. At a depth slightly short of 1,000 feet the discovery well has a reputed production of around 70 bbls. a day of high-grade oil. A small refining plant, taken in a couple of years ago, will be run during the 1924 season to supply the drilling crew with gasoline for power purposes. In the years 1921-23, Imperial Oil, Ltd., started three new tests on locations at distances varying from 1 to 40 miles from the discovery well. Two of these tests carried to approximately 2,000 feet, finished dry; and the other, at Bluefish Creek, was not carried to a conclusive depth. Crews wintered at the camp for four successive seasons, but at the end of the 1923 drilling all hands came "outside" and the northern camps were closed for the winter. The Fort Norman discovery well is the furthest north producing well on the continent, being located about 53 miles north of Fort Norman, about 100 miles south of the Arctic Circle, and 100 miles west of Great Bear Lake.

In Alberta work was started earlier in the season on a new test near Coalspur, in the Rocky Mountain foothills west of Edmonton. A new test is also being started on Rice Creek, in the Willow Creek area in the southern foothills, to the west of Nanton. No other new tests have been officially announced; but it is unofficially reported further new drilling will be done in the boundary area of southern Alberta, and in the Irma-Wainwright field.

In northern Alberta, the Prairie Oils, Ltd., test at High Prairie, in charge of F. H. Stover of Chatham is drilling with two 12-hour shifts and making hole rapidly.

Irma-Wainwright

In the Irma-Wainwright Field, east-central Alberta, British Petroleums No. 3, Section 29-45-6w4, spudded in on June 11, and is reported down about 100 feet. This is the first test to start work this year in east-central Alberta. Maple Leaf Oil Co., Section 24-45-8w4, has also spudded in. British Petroleums No. 4, close to No. 3, is reported rigged up and practically ready to spud in. The Wainwright Oil Producers Syndicate, Section 36-44-7w4 has the derrick up and machinery on the ground. Western Consolidated Oil Co., Section 20-45-6w4, is rigging up. The Globe Drilling Co. is reported to have resumed work at 1,200 feet on the unfinished Mutual Oil & Gas Co. test on Section 14-47-27w4, near Pigeon Lake. The Anglo-Wainwright Oil Co. of Vancouver, B. C., has secured a rotary outfit and casing in Arkansas and is bringing the equipment north for its test in the Irma-Wainwright Field.

In the Many Island Lake Field, northeast of Medicine Hat, the Community Oil Wells, Section 19-14-1w4, which is down 2,471 feet, with some wet gas production, has pulled casing and is cleaning out the hole, preparatory to testing the gas production. In the Boundary Field, east of Coutts, the Canadian Oil & Refining (Rogers-Imperial) Section 21-1-11w4, is shut in, and no steps have yet been taken toward the further development of this area. The Canadian Western Natural Gas Co. have arranged for the purchase of 38 miles of 10-inch pipe for the new pipe line connecting its gas field at Foremost, Alta., with the main line at Bow Island. Some connecting lines will also be laid, and No. 4 well drilled in the Foremost Field, the total outlay involved being estimated at $750,000.

Standard Oil Co. of Louisiana, rigging up No. 4 Griffin, Section 33-15-15; waiting on standard rig with 600 feet of oil in hole at 1,957 feet in No. 1 Powell, Section 34-15-16; set 6-inch casing at 2,220 feet in No. 5 Umpstead, Section 32-15-15.

J. S. Smith drilling gumbo at 2,000 feet in No. 1 Shirey, Section 33-15-17; Staves and others drilling at 2,355 feet in No. 1 Jeffus, Section 26-15-17; set 10-inch casing at 130 feet in No. 2 Jeffus, same section; Sun Oil Co. rigging up No. 4 Berry, Section 24-15-17.

Sutton and others rigging up No. 16 Hughes, Section 21-15-16; drilling shale at 1,400 feet in No. 3 McElroy, Section 20-15-16; rigging up No. 2 D. Minor, Section 20-15-16; A. F. Tarver, drilling at 940 feet No. 4 Fincher, Section 19-15-16.

The Texas Co. set 6-inch casing at 2,260 feet in No. 3 Anderson, Section 13-15-16; derrick up for No. 5 Berry, Section 33-15-15; waiting on standard rig with 17 feet of broken sand and 800 feet of oil in hole at 2,282 feet in No. 10 LaGrone, Section 30-15-16; set 2-inch tubing with packer to test 7 feet of sand at 2,255 feet in No. 6 W. A. Smith, Section 31-15-16; set 6-inch casing at 2,220 feet in No. 6 Snow, same section; set liner to test 20 feet of broken sand at 2,297 feet in No. 7 Snow, same section; waiting on standard rig with 600 feet of oil and 9 feet of sand in hole at 2,235 feet in No. B-3 Solmson, Section 32-15-16; set 10-inch casing at 65 feet in No. B-4 Solmson, same section; rigging up No. 5 Stringfellow, Section 28-15-16; waiting on standard rig with 500 feet of oil in hole and 27 feet of sand at 2,313 feet in No. 6 Stringfellow, Section 28-15-16.

Weaver & Smithwick drilling lime at 1,955 feet in No. 1 Tuberville, Section 17-15-16; Whittiken and others waiting on cable tools to fish out drill stem at 2,330 feet in No. 2 Anderson, Section 23-15-17; set 10-inch casing at 45 feet in No. 1 Hodges, Section 23-15-17; Whittaker and others rigging up No. 1 Shirley-Berg, Section 29-15-16.

Cotton Valley District

About the only signs of healthy activity throughout the north Louisiana field are in the Cotton Valley district of Webster Parish where recent development has established the certainty of a real oil field. Overproduction and the fact that the pipe line companies are not anxious to take the oil from the new territory is holding back operations to a certain extent but at the close of the week there were 22 rigs running with 5 rigging up to drill, 5 derricks and one new location.

The Fortuna Oil Co. has set 6-inch casing at 2,465 feet in No. 1 L. Merritt, drilling at 1,100 feet in No. 2 and rigging up No. 3, Section 14-21-10.

Gulf Refining Co. is rigging up to drill No. 2 A. J. Hodges, Section 11-21-10, and Hude & Aarnes set 12½-inch casing at 200 feet in No. 1 W. W. Cox, Section 22-21-10.

Humble Oil & Refining Co. is rigging up No. 3 Babb and has derrick up for No. 4, Section 14-21-10; set 6⅝-inch casing at 2,472 feet in No. 1 A. J. Hodges, drilling at 2,450 feet in No. 2 and has derrick up for No. 3, Section 12-21-10; derricks up for No. 1 and No. 2 Merritt, Section 14-21-10, and drilling at 2,435 feet in Hodges No. A-1, Section 10-21-10.

Invincible Oil Co. is setting liner at 2,560 feet in No. 1 A. J. Hodges, and drilling at 1,850 feet in No. 2, Section 11-21,10; Set 6⅝-inch casing at 2,508 feet in No. 2 Merritt; drilling at 1,135 feet in No. 3 and set 12½-inch casing at 190 feet in No. 4, Section 14-21-10.

Ohio Oil Co. is drilling at 1,275 feet in No. 1 Crichton, Section 21-21-10, and rigging up to drill No. 1 R. L. Holiway Section 23-21-10; Oil Field Gas Co. bailed dry at 2,450 feet in Hope Estate No. B-2 and is waiting for 6-inch to set in No. A-1 with location made for No. A-3, Section 13-21-10.

The Standard Oil Co. set 10-inch casing at 210 feet in No. 1 McInnis, Sec-

(Continued on Page 64)

PERFECTION VAPOR PRESSURE TANKS
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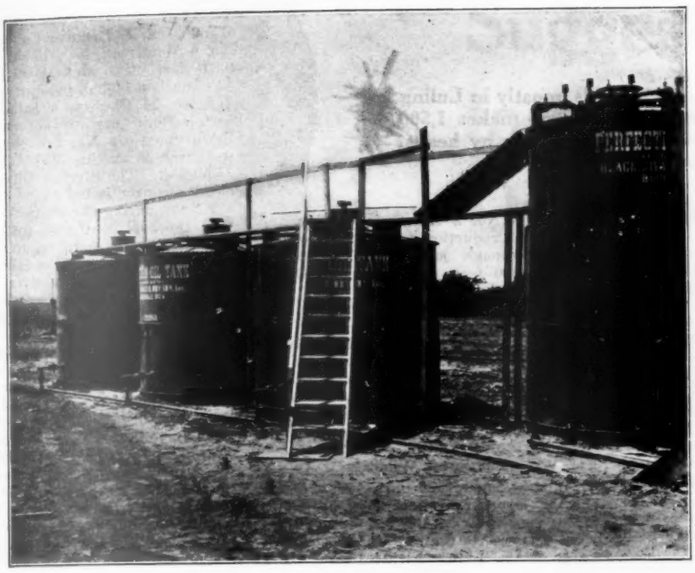

At the left is a complete Perfection battery. The large tank in the foreground is used as a flow tank which also acts as a gas separator. The owner saves the cost of installation in gas saved for fuel on the lease.

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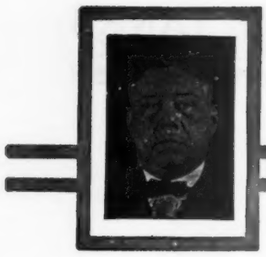


Gulf Coast Oil Operations

By P. L. McGreal

Daily average gross production shows decrease of 6,257 bbls. mostly in Luling Field. Gulf Production Co.'s No. 9 A. Winifree, Orange Pool, makes 1,500 initial. Gulf Co.'s No. 6-A Harrison, Hull Pool, flowing 350 bbls. by heads. Efforts to extend Orange Pool southeast and northwest fail.

HOUSTON, Tex., June 23.—The estimated daily average gross production for the Gulf Coast pools and the southwest fields is placed at 129,050 bbls. for the week, compared with an estimate of 135,307 bbls. last week, representing a decrease of 6,257 bbls. The estimate for the Gulf Coast pools is placed at 80,055 bbls. against 80,357 bbls. last week. For the southwest fields the estimate for the week is 48,995 bbls., a decrease of 5,955 bbls., all of it in the Luling Field.

Incomplete reports of the gross stocks of Gulf Coast crude for the 30-day period from May 15 to June 15 indicate a decrease of 160,000 bbls.

The following table shows the estimated daily average production in each district:

District—	Gross Bbls.
Batson	1,495
Blue Ridge	1,350
Barber Hill	165
Dayton	85
Damon Mound	1,535
Edgerly (La.)	620
Goose Creek	11,075
Humble	6,500
Hull	21,050
Jennings (La.)	530
Markham	450
Pierce Junction	370
Orange	10,300
Spindletop	920
Saratoga	1,465
Sour Lake	4,540
Vinton (La.)	5,300
Welsh & Anse (La.) Bute (La.)	80
West Columbia	11,150
*Miscellaneous	1,075
Total	80,055
Southwest Fields	
Laredo	4,200
Somerset	2,485
Callihan	790
Rockdale-Minerva	520
Luling	41,000
Total	48,995
Grand Total	129,050

*Includes Big Creek, High Island, Stratton Ridge, Nacogdoches, etc.

Laredo Districts

In Webb and Zapata Counties, the Shasta Oil Co.'s No. 6 in the Mid-Ojulas Pool is rated at 100 bbls. at 1,755 feet. Wheatley and others' No. 9 is credited with 100 bbls. initial at 1,720 feet. The Binney Oil Co. abandoned No. 1 and Allsworth Brothers quit No. 1 in the Schott Pool.

In Zapata County, the Mirando Oil Co.'s No. 13 is drilling below 1,140 feet and the Hill-Pierce interests of Chicago, is rigging for two tests.

In Webb County, in the Schott Pool, Allsworth Brothers set casing in No. 2. The Binney Oil Co.'s No. 2 is to test a showing around 1,710 feet in No. 2. The Laredo Oil Co. set casing in No. 8, east of Mirando City, at 1,640 feet. O. W. Killiam is drilling No. 1, survey No. 463, north of the Richmond-Garcia Oil Co.'s No. 2. The Hardly Able Oil Co. has rigged No. 2, Survey No. 58, and the Carnahan Producing & Refining Co. has a derrick standing for No. 60.

In the Mid-Ojulas Pool, the Cornhuskers Oil Co.'s No. 4 set casing at 1,645 feet. The Shasta Oil Co. is rigging No. 7 and the Richmond-Garcia Oil Co.'s No. 4 is below 1,500 feet. Kirkpatrick & Lucas' No. 1 is bailing. Derricks are up for Wheatley and others' No. 10 and Quigg & Olsan's No. 4. In the Wolcott Pool, the Magnolia Petroleum Co.'s No. 5 is deepening below 2,100 feet and No. 9 is drilling with a machine. Chandler & Gear's No. 7 is below 1,000 feet.

In the Aviator Pool, the Rydal Oil Co.'s No. 1 Puigg is drilling, offsetting the J. K. Hughes Development Co.'s wells on the east. The Texical Oil Co.'s No. 2 survey, No. 607, is drilling, with rigs in for the Associated Oil Co.'s No. 11 and the Andrews Petroleum Co.'s No. 1, Block No. 49. In the Caroline-Texas gas district, Morgan & Gibble's No. 2 is below 1,350 feet with the Carolina-Texas Oil Co.'s No. 6 shut down at 2,005 feet. Russell and others' No. 1, Block No. 31, is drilling at 1,770 feet. H. H. Palmer's No. 1 Walker is drilling around 1,700 feet. R. S. Howard's No. 1 Albercrass is fishing. The Cole Petroleum Co.'s No. 4, northeast of Bruni, is drilling at 675 feet. The A. D. J. Syndicate's No. 2-B Pratt ranch, southwest of Encinal, is below 4,300 feet and the Boyd Oil Co.'s No. 1 is around 1,350 feet.

In Duval County, the Iowa-Texas-Oklahoma Oil Co.'s No. 1 Peters is deepening from 2,000 feet. The Mesquite Oil Co. has resumed drilling No. 2 fee.

Less Wildcatting

There is a dearth of wildcat news in the Gulf Coast regions, where the major companies have cut operations to the bone and are only drilling such tests as are called for by lease obligations. The Sun Oil Co. continues its search at High Island, in the eastern part of Galveston County, a partially saline dome. It is setting casing in No. 6 Cade there at 3,330 feet. No. 7 Cade is drilling around 900 feet and No. 1-C Cade is below 1,800 feet.

On the south side of the Boling Dome in Wharton County, the Gulf Production and Atlantic Oil Producing Co.'s joint No. 4 on the Weems is drilling around 1,365 feet in lime and sand.

On the south side of the Stratton Ridge Dome in Brazoria County, the Associated Oil Co.'s No. 1 Perry is below 4,250 feet. The Humble Oil & Refining Co. is starting No. 1 Perry and the Sinclair Oil & Gas Co.'s No. 1 Perry. The Freeport Sulphur Co.'s No. 11 Dannebaum on the northeast side of the same dome is idle.

The Texas Co. is drilling a second test between the Blue Ridge and Pierce Junction Pools in Harris County and also near Addicks. The Dome Petroleum Development Co., of which James W. Rich is president and Claude Bannister secretary and treasurer, junked No. 1 Chachera on Buffalo Bayou, 11 miles west of Houston, at 700 feet and is starting a second test there on a 3,000-acre lease. The company will drill a number of shallow, or formation tests, with a light rotary outfit. The Texas Exploration Co. is trying to pack off the water in No. 17 Warren ranch on the north side of the Hockley Dome, which developed while the test was bailing at 2,963 feet. Its No. 19 Warren on the northwest side is drilling with a small outfit at 450 feet.

The Gulf Production Co. and D. J. Harrison jointly are making a second test on a new dome, south of Dovers in Liberty County. The Houston Oil Co. is shut down at Big Hill in Jefferson County, another partially defined saline elevation. At Big Creek in Fort Bend County, Rich & Maxudian's No. 1 Ahlers is below 3,600 feet. The Oil Production Co.'s No. 2 Ahlers is drilling and the Gulf Production Co.'s and Snowden & McSweeney's joint No. 7 Wheat is below 2,900 feet. Their No. 12 Davis, there, which came in last week good for 1,000 bbls. initial, is shut in for lack of storage.

In Montgomery County, the El Saline Oil Co. is drilling a test 9 miles east of Conroe. Kelly and others have a location near Grand Lake. The Palacios Oil & Development Co.'s No. 1 Highberg, near Palacios, is drilling around 825 feet.

Southwest Wildcats

Wildcat operations are more active in the structure country to the southwest, especially in Bastrop and Guadalupe Counties to the northeast and southwest of the Luling Field; Bexar, Atascosa,, Medina and Wilson Counties surrounding the old Somerset Field; McMullen and Live Oak Counties because of the Calliham oil and gas shallow sand district and San Patricio County. Parts of Webb, Zapata and Jim Hogg Counties are attracting wildcatters. All these counties have been geologized and checked and more than 25 tests are now drilling within the area described.

Several of the large corporations have established district offices at San Antonio, from which place scouts and geologists are watching and checking logs of drilling wells and also acquiring leases or buying the land outright in fee simple. In other cases, seven-eighths of the mineral rights are purchased. By buying the land in fee or the mineral rights, the companies eliminate all drilling obligations and can take their time for development. For this reason there will be no rush of work, unless some of the tests now drilling should open a new field. The large operating companies prefer to let matters rock along until there is a more urgent demand for crude.

In Gonzales County, Smith, Compton and Hindman of Houston, are starting a test on Five Mile Creek, 12 miles south of Gonzales. The Bryan Production Co.'s No. 1, near Smiley, in the same county, shut down for some time at 3,000 feet, will plug back to test a sand at 978 feet, passed up while drilling.

In Guadalupe County, the Grayburg Oil Co.'s No. 1 Weinert is drilling below 600 feet. The Waldenhuda Oil Co.'s No. 1 Smith is at 700 feet. Elliott & Co. have a location for No. 1 Brown between these two. The Grayburg Oil Co. test is near Seguin.

Very little change is noted in the drilling depths of the other tests drilling in that county, which include the United North & South Oil Co.'s No. 1 Helm, south of the Southern Pacific railroad, below 1,750 feet; Dixie Oil Co.'s No. 1, idle at 1,200 feet; Rycade Petroleum Co.'s No. 1 Meifhofer, idle at 2,300 feet; National Oil Co.'s No. 1 Hensel around 2,100 feet and Armstrong and others' No. 1 Baier idle at 2,650 feet.

Gulf Coast Pools

Completions during the week in the Gulf Coast pools, or the heavy oil districts, number 28, 11 worked over wells. The new production totals 3,020 bbls., Orange Pool contributing 1,760 bbls. The Hull Pool furnished 575 bbls. Six completions were dry and abandoned, three bailed salt water and one was a gasser. Ten holes are bailing.

In the Orange Pool, the Gulf Production Co.'s 9-A Winifree was credited with 1,500 bbls. initial at 3,600 feet. Same company's No. 1 Hammam-Consolidated is making 1,000 bbls. of fluid at 3,500 feet, 35 per cent sediment and water. The Rycade Petroleum Corp. abandoned No. 3-A on State Land in Cow Bayou at 3,540 feet. It was a salt water well. The Humble Oil & Refining Co. worked over No. 4 Winifree into a 15-bbl. pumper at 3,345 feet. The Mutual Oil Co.'s No. 5 Chesson is a 30-bbl. pumper at 3,345 feet and No. 11 Chesson is bailing at 3,375 feet. Both are workovers. Edgerly Petroleum Co.'s No. 2 Carbello, another workover, is making 30 bbls. on jack at 3,550 feet. The Sinclair Oil & Gas Co.'s No. 2 Granger is bailing at 3,325 feet.

Efforts during the past 90 days to extend the pool southeast, east, northwest and west having been unsuccessful, drilling operations there have fallen off. The operators confine themselves to drilling on inside locations between the old wells or working over former producers and trying to restore them. The Sun Co.'s No. 5 Brown to the southeast, is shut down at 4,570 feet. The Brownie Babbittee Oil Co.'s No. 2 Brown is drilling around 3,900 feet and No. 3 Brown is below 4,450 feet. On the east side of Cow Bayou, the Gulf Production Co.'s No. 15 Hager Fee, is at 4,665 feet and No. 16 below 3,000 feet. Nos. 4 and 11 on that tract are deepening at 3,275 and 3,565 feet respectively. Near the bayou, No. 7 Pevite is at 4,355 feet. Rycade Corp.'s No. 2-E in the bayou is at 4,585 feet and No. 4 is below 3,540 feet with No. 5 drilling around 3,500 feet. No. 4 Kishi, near the county bridge is at 3,070 feet. On the north side, the Mutual Oil Co.'s No. 13 Chesson is rigging. Out to the northeast, 1 mile from production, the American National Oil Co.'s No. 1 Winifree is drilling below 4,700 feet.

In the old part of the pool, the Sun Oil Co.'s No. 5 Gunstream is drilling at 2,415 feet. Same company's No. 1 Kato, northeast, is deepening at 4,745 feet. The Orange Petroleum Co.'s No. 7 Chessen is at 3,413 feet. The Humble Oil & Refining Co. is rigging No. 10 Winifree. The Sdgerly Petroleum Co. is working over No. 1 Carbello and the Brownie Babbittee Oil Co.'s No. 9 McLean is drilling at 3,200 feet.

Hardin County Pools

In the Batson Pool, Sun Oil Co.'s No. 72 Parafine is a 5-bbl. well at 910 feet and Ada Belle Oil Co.'s No. 74 Paraffine the same capacity at 490 feet.

The Kirby Petroleum Co.'s No. 2 Hodges, a proposed deep test, is drilling at 1,545 feet. The East Batson Oil Co.'s No. 6 Counselman is rigging. S. B. Buchanan's No. 9 Milhome is drilling around 765 feet and Ada Belle Oil Co.'s No. 75 Paraffine is below 470 feet.

In the Saratoga Pool, Rio Bravo Oil Co. abandoned No. 83-B at 1,905 feet, after working over several times. Weldon Oil Co.'s No. 5 Island is a water well at 1,475 feet. San Bernard Oil Co.'s No. 5 is a 5-bbl. pumper at 725 feet. Cotton Oil Co.'s No. 4 Gulf is bailing at 1,290 feet and Paggi Brothers' No. 4 Lewis the same at 1,350 feet.

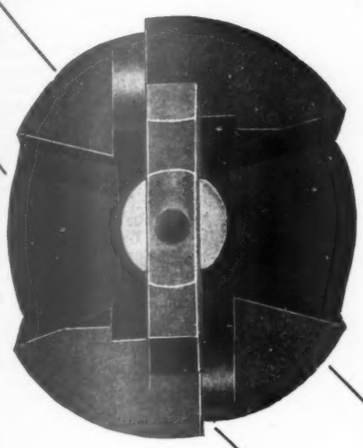
Rio Bravo Oil Co.'s No. 2-P is drilling at 2,710 feet. Nos. 210-B and 2 Bryan are rigging with a location for No. 211-B. The Skinner Oil Co.'s No. 13 Kirby is around 1,000 feet.

Harris County Pools

In Humble Pool, The Texas Co.'s No. 14 Koehler is good for 50 bbls. at 2,950 feet and Southern Petroleum Co.'s No. 39 Landslide is pumping 75 bbls. Both are workover holes. Southern Petroleum Co. is rigging No. 40 Landslide up for No. 2 Lee. Several old wells are being worked over in various parts of the pool, while Deering and others' No. 2 Binnenett, on the northwest side, is drilling.

In Goose Creek Pool, Humble Oil & Refining Co.'s No. 33 Schilling is bailwell. The Gulf Production Co.'s No. 7 ing at 4,485 feet, showing for a nice Chapman-Bryan at the mouth of the

(Continued on Page 74)



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Fields of the Central West

By Whit

Ohio Oil Co. gets 45-bbl. producer, Liberty Township, Wood County, Ohio; Raney-Sage Co. 20 bbls. and Mrs. Clarence Potter 20 bbls. Mann, Huber & Tichenour have 50-bbl. natural well in Center Township, Gibson County, Indiana. Arkansas Fuel Oil Co. 16-bbl. completion in Wabash County, Illinois.

FINDLAY, Ohio, June 23.—A general survey of the Central West fields show operators are not pushing the drill, even the Western Kentucky Field does not make the showing it should for shallow territory, and eastern Kentucky is only being drilled to conform with lease conditions, in fact the same condition prevails over the States that constitute the Central West area. The Central Ohio Field, which has been an active one, shows that completions are slow and few, as is the case in Indiana, Illinois, Kentucky and Tennessee, the only field showing its usual number of completions being the old Trenton Rock area of northwestern Ohio.

Trenton Rock crude has held steady in price and just so long as no drops are given the usual number of wells will be brought in, for regardless of how many wells are drilled in the oil field it will not mean much of an increase in the average production of the field.

The best completion reported from the Lima Field of northwestern Ohio for the week was the Ohio Oil Co.'s No. 21 on the Charles Mercer farm, Section 26. Liberty Township, Wood County, and near Rudolph, with a production of 45 barrels from a depth of 1,345 feet. In the same township, the Raney-Sage Oil Co.'s second well on the W. M. Mercer, Section 14, is in and shows for 20 bbls. Mrs. Clarence Potter has drilled in her No. 19 on her own farm, Section 21, and it is reported at 20 bbls. B. C. Calikins' No. 2 on the northwest corner of the C. C. and Martha Lapointe farm, Section 19, same township, pumped 12 bbls. at 1,530 feet, and the H. L. P. Oil Co.'s No. 1 on the southwest corner of the F. Steen farm, Section 36, pumped 7 bbls. from a depth of 1,498 feet, or close to 300 feet in the Trenton.

In Bloom Township, Wood County, the Ohio Oil Co.'s No. 16 on the northwest corner of the Daniel E. Easley, Section 29, pumped 20 bbls. at 1,345 feet. In Henry Township, J. B. Heimheffers' No. 1 on his own farm, Section 1, is pumping salt water with a showing of oil and may make a small pumper when the water becomes exhausted to some extent. In Freedom Township, Onsel Brothers have abandoned Nos. 1, 2 and 3 on the A. H. Bruning farm, Section 15. In the same township, the Ohio Oil Co. is drilling No. 21 on the H. and J. C. Bruning farm, Section 27, and the Paragon Refining Co. is drilling No. 6 F. G. and W. Ables, Section 36. In Lake Township, R. G. Bowe is drilling a test on the Henry Bahnsen farm, Section 36, and Charles F. Zeising and others are drilling No. 3 Fred Overmyer, Section 35, and No. 3 Emil Brendt, Section 36. In Troy Township, the Onsel-Hanrahan Oil Co. abandoned Nos. 4, 5 and 6 Mary Jacobs farm, Section 21, and Johnson & Johnson are drilling No. 11 Herman Linke, Jr., farm, Section 13.

In Allen Township, Hancock County, the Ohio Oil Co.'s No. 11 S. D. Spitler, Section 11, pumped 15 bbls. at a depth of 1,403 feet, and in Portage Township, this company's No. 7 Miranda J. Wolfe farm, Section 33, pumped 6 bbls. In Liberty Township, the same company abandoned No. 1 Frank W. Carter farm, Section 24. In Marion Township, the Findlay Petroleum Co. has a rig in for No. 14 on the J. G. Oberholtzer, Section 1. In Allen Township, Leonard B. Decker abandoned Nos. 1, 2 and 3 James Decker, Section 26. In Eagle Township, B. Porter and others are drilling No. 17 J. H. Haley, Section 5, and have a derrick up for No. 2 on the S. M. McClelland, Section 7. In Union Township, Ewing & Montgomery are drilling No. 9 Henry Deeds, Section 12. In Biglick Township, A. S. Cochran and others have a rig in for a test on the C. and C. Saltman, Section 16.

In Amanda Township, Allen County, W. O. Huntley's second test on the northwest corner of the John Etgs, Section 20, pumped 10 bbls. In Marion Township, the Ohio Oil Co.'s No. 6 Nellie McBride farm, Section 13, pumped 15 bbls.

In Logan Township, Auglaize County, the Waller Oil Co.'s second test on the Mrs. M. A. Dingledine, Section 3, pumped 3 bbls., and in Moulton Township, Grover Lynch and others' drilled a dry hole in a test on the George Blank, Section 27.

In Sandusky Township, Sandusky County, the Paragon Refining Co. abandoned No. 5 William Henesel, Section 18. In Woodville Township, A. J. Fowler and others' did the same with Nos. 2 and 3 Henrman Linke, Jr., farm, and the Interstate Operating Co. is drilling No. 8 Edward Overmyer farm, Section 27.

In Liberty Township, Mercer County, Strong Brothers' No. 2 F. V. Bollenbaugh farm, Section 17, pumped 5 bbls. and in Union Township, the Watson Oil Co.'s No. 13 J. A. Tingley farm, Section 1 pumped 5 bbls.

In the Elmore Field, in Harris Township, Ottawa County, T. F. Lewis and others' No. 8 on the Magee & Magee farm, Section 19, pumped 18 bbls. from a depth of 1,306 feet, and the Babion Oil Co.'s No. 5 Christian Neeb farm, Section 15, pumped 4 bbls. at 1,340 feet. The Zorn-Hornung Co., is drilling No. 8 Mary Schott, Section 20, Gust Magsig & Son are drilling No. 4 J. D. Smith, Section 23, and Fox and others' are drilling a test on the A. Weislet, Section 18. In Allen Township, same county, the Ohio Oil Co.'s No. 9 Augusta Gonskey farm, Section 2, pumped 2 bbls.

Quietude prevails in the Ellerman section of Cynthian Township, Shelby County, where a few months ago there was quite an excitement, and although a few wells have been under drilling operations, no new completions are reported from the prospective field.

Paulding County failed to report a completion for the week, but a number of new holes are being started on account of the big well recently completed on the W. D. Ryle farm, in Section 4, Benton Township, by the Washington C. H. Oil Co. This well is by far the largest producer yet encountered in the new Payne Field, and further drilling in that section, may bring forth quite a productive field, as most of the territory is virgin and far removed from the former big production in the Trenton Rock areas of both Ohio and Indiana, as the Payne Field is located less than 3 miles from the State line.

Few completions are reported from the Indiana fields during the week, as work to a large extent goes slow on account of the extreme hot weather followed by heavy storms, especially in the eastern portion of the State. The Princeton area in the southwestern portion has a few completions but none of any great importance. In Washington Township, Gibson County, Loeb, Fought and others' second test on the northwest corner of the C. Dawson farm, Section 18, came in a duster at 1,338 feet. In Center Township, same county, Mann, Huber and Tichenour met with much better success, as their No. 3 on the northeast corner of the O. M. Welborne, Section 23, produced 50 bbls. natural and even surprised the owners. Top of sand was found at 1,314 feet and bottom at 1,421 fet. The producing sand in that section of the field is very shallow sometimes there being but from 1 to 3 feet of sand. In Patoka Township, same county, the Farmers Oil Co. abandoned Nos. 3, 18 and 32 on the C. T. Emerson, Section 10, and No. 1 Minnie Lyles, same section.

In Harrison Township, Knox County, H. Like and others' No. 1 on the northwest corner of the C. C. Cooper, Section 30, proved a dry hole at 1,230 feet.

In Turman Township, Sullivan County, Fred Bays drilled in a light gas well at a test on the northwst corner of the J. W. Hupp farm, Section 35, at 824 feet. In Jackson Township the Barcus Oil Co.'s test on the E. S. Gochenour, Section 22, was a dry hole at 724 feet.

No new completions are reported from the productive Hotmire Pool along the dividing line of Jay and Randolph counties.

Illinois

There is no activity in any section of Illinois at this time, but the work being done in Wabash County is possibly being more closely watched than any other section and this being a hit and miss territory and as spotted as a leopard. The latest completion to encourage work is the test drilled by the Arkansas Fuel Oil Co. on the northwest corner of the A. R. Canady farm, Section 18, Friendsville Township, where a 16-bbl. well was found in the Biehl sand.

In Johnson Township, Clark County, the First National Bank of Parkersburg's No. 4 on the J. Claypool farm, Section 12, pumped 2 bbls. at 525 feet.

In Honey Creek Township, Crawford County, McDowell & Goaly's No. 9 J. W. Rich, Section 4, pumped 10 bbls.

In Bridgeport Township, Lawrence County, the Snowden-McSweeney Co. abandoned No. 4 Charles McOrr farm, Section 30. In Centralia Township, Marion County, Bays and others pulled out No. 1 on the southeast corner of the Schiffendecker & Co.'s land, Section 30.

Eastern Kentucky

Hot weather and heavy storms caused quiteude in th eastern Kentucky fields although the cut of cents a barrel, had more effect than the weather. Many strings of tools are hung up and wells not completed, and about th only drilling now under way, is where work may be done in offest wells.

A heavy stream recently hit the Ida may section along the line of Lee and Owsley County and did considerable damage. Work has been delayed for more than a week on account of high water and it may be a few weeks until the field recovers. This is the most active operating sector outside of the two Weir sand fields in the big Sandy Valley.

The only completions reported for the past several days from the field, come from the North Weir Sand Field of Lawrence-Johnson counties, and wells completed by the Union Gas & Oil Co. This company's No. 5 James Dials farm showed a flush of 15 bbls.; No. 32 J. J. Gambill farm, 20 bbls.; No. 15 Andrew Skaggs farm. 30 bbls., and No. 15 J. M. Fyffe farm, 15 bbls. This company has started some additional wells in No. 4 Harrison Bailey farm; No. 27 Procter Sparks farm; No. 2 J. E. Holbrook No. 1 farm; No. 7 J. C. Gillam No. 1 farm, and No. 12 George Evans farm.

West Kentucky-Tennessee

By Vern T. Whitney

BOWLING GREEN, Ky., June 23.—The 30-cent decrease in the price of all western Kentucky crude has slowed down operations materially. For some time the pipe lines in Barren, Cumberland and Monroe Counties have been unable to run much oil from these counties because of a sudden shortage in tank cars, according to reports. This has, of course, completely checked operations.

New price schedules call for $1.55 for 32.9 and below, up to $1.75 for 36 Baume and above in Warren, Allen Simpson and the Owensboro district, while Barren, Cumberland and Monroe County crude will bring $2 per barrel.

Pipe line runs for May from the whole of western Kentucky amounted to 123,012.43 bbls., a decrease of 9,571.29 bbls. compared with April. The largest decrease occurred in Cumberland and Monroe Counties which fell off 9,938.44 bbls., while Barren County runs were 4,446.69 bbls. less than the month previous. All other counties show slight increases. The Owensboro district finally reached the 10,000 bbl. mark, the highest in its history. There are only 80 wells connected to pipe lines in the Owensboro district, average age being better than 12 months. The average per well is therefore 4½ bbls. per day, which compares favorably with any district east of the Mississippi River when the shallow depth of 750 feet is taken into account.

By counties, the pipe line runs for May were as follows:

County—	Runs	Increase	Decrease
Warren	52,476.29	335.37	
Allen	41,786.68	1,156.53	
Hancock-Ohio	10,790.71	2,635.92	
Cumb'd-Monroe	10,765.64		9,938.1
Barren	3,225.57		4,446.6
Simpson	2,820.54	371.31	
Hopkins	1,147.00	314.77	
May runs	123,012.43	4,813.84	14,385.1
April runs	132,583.72		
Difference	9,571.29		

Warren County Wells

The best well of the week in Warren County was the Baker-Jones Syndicate's No. 3 Gillespie 103 acres, in the McLemore-Gillespie-Price Pool, which flowed over the mast several times after being treated to a 60-quart shot in sand from 1,063 to 1,071 feet. Shale was found from 993 to 1,018 feet. The well is conservatively estimated at 50 bbls. initial. It was not over 800 feet from wells which have been producing for over a year and shows the gas pressure unimpaired in this very prolific pool. In the same district, the Olive Green Oil Co. got a strong 25 bbl. well in its No. 5 McLemore, at a total depth of 1,091 feet, about 65 feet below the shale. Sands from 1,043 to 1,047 and from 1,077 to 1,090 feet were

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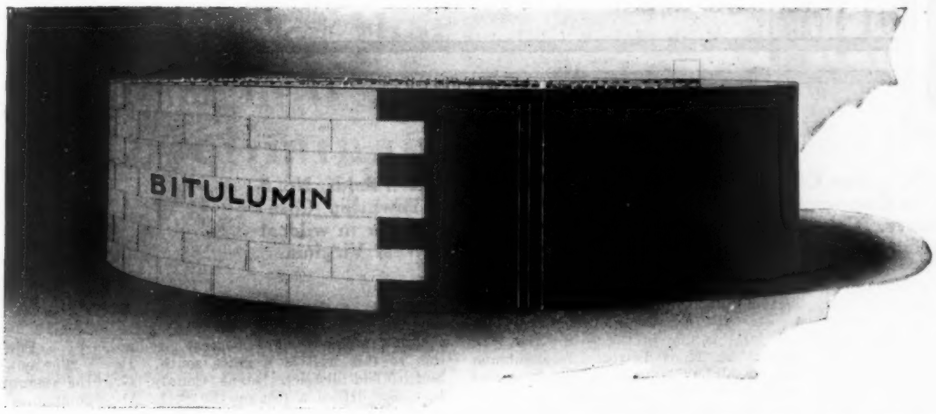

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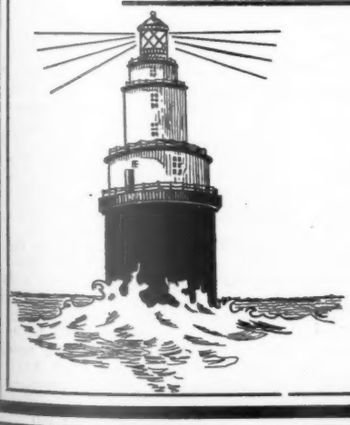

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By D. S. Wakenight

Leonard Oil & Gas Co. completes only fair producer in Eastern fields, No. 5 Ashcraft, in deep sand territory of southeastern Ohio, Pike Township, Coshocton County. Columbia Gas & Electric Co. finds 2-bbl. producer in wildcat 6 miles from production, Jefferson district, Lincoln County, West Virginia.

PITTSBURGH, Pa., June 23.—The only fair producer in any section during the week is the Leonard Oil & Gas Co.'s No. 5 on the Jacob T. Ashcraft farm located in the deep sand territory in southeastern Ohio in Section 16, Pike Township, Coshocton County. They swabbed 45 bbls. the first 24 hours after being drilled through the Clinton sand and shot. It is located in defined territory. Two miles southeast of Killbuck in the Laurel Run Pool, Section 17, Killbuck Township, Holmes County, the Killbuck and Millersburg Oil & Gas Co. got a light gasser in the Berea grit at No. 6 on the H. C. Smith farm.

Good Gasser in Licking

In Section 18, Fallsbury Township, Licking County, the Carter Oil Co.'s test on the J. W. Martin farm is a gasser good for 4,000,000 feet in the Clinton sand. In Section 16, Monroe Township, Perry County, McVey Brothers and Weaver drilled a test on the H. C. Weaver farm through the Berea grit showing for a very light pumper. In Lot 5, Madison Township, Licking County, W. W. and A. T. Wehrle are drilling a test on the O. C. McClelland farm, dry in the Big Lime, to the Clinton sand. East of Newark City, Newark Township, the same parties drilled a second test on the Charles McManus farm into the Big Lime and showing for a good producer.

Light Pumpers in Noble and Knox

On the J. L. Mahler farm, Section 28, Enoch Township, Noble County, W. L. Clark & Co.'s No. 16 on the J. L. Mahler farm is a very light pumper in the Macksburg 500-foot sand. In Section 13, Brown Township, Knox County, the East Ohio Gas Co. has drilled No. 12 on the H. S. Snively farm through the Berea grit, good for five bbls. a day. In Section 21, Jackson Township, the Arkansas Fuel Oil Co.'s No. 5 on the L. V. Dugan farm is showing for a 11-bbl. pumper in the Berea grit. In Section 23, Harrison Township, F. Marion Snyder & Co. completed and shot No. 14 on the George W. Miller farm, not good for more than 2 bbls. a day. In Section 3, Clay Township, Snyder & Carson have a 5-bbl. pumper in the Berea grit at No. 14 on the W. P. Bebout farm.

Washington County

In the Lowell district, Section 25, Salem Township, Washington County, W. P. Rice & Co. have a show for a very light pumper in the Berea grit at No. 24 on the George Mattern, Jr., farm. In Section 29, Lawrence Township, Perry Davis & Co.'s test on the Daniel Ludvis farm is dry in the first Cow Run sand. In Liberty Township, James Hadley and others completed in the Maxon sand a test on the James Hadley farm, good for 500,000 feet of gas. In Jackson Township, Noble County, George Hess & Sons have a light pumper in the Macksburg 500-foot sand at No. 14 on the M. Rubrake farm. In Section 8, Sharon Township, Earl Stevens & Co. drilled through the 700-foot sand at a test on the Frank Boggs farm. They scored a failure. In Jackson Township, E. H. West & Co. had the same luck when they drilled a second test on the P. P. McFarland farm through the 800-foot sand.

In the Rinards Mills district, Washington Township, Monroe County, the Carter Oil Co.'s test on the Moses Dundas farm is dry in the Berea grit. In Section 21, Knox Township, Columbiana County, John Davidson drilled a second test on his own farm through the Berea grit and dry. In Section 2, Rush Creek Township, Fairfield County, the Rushville Oil & Gas Co. has started to drill a second test on the Francis Holiday farm, 1,800 feet southeast of the first test. In the same township, the Nypenno Oil Co. started to drill a test on the George Everett farm. In the southeast quarter of Section 10, Hopewell Township, Muskingum County, the Mideast Oil Co. has the rig completed for a test on the M. J. Williams farm. In York Township, Morgan County, the Daily Oil Co. drilled its test on the O. C. Crider farm to the Berea grit. It is a gasser. In Section 6, Monroe Township, Harrison County, Arbaugh & Getchell have a light pumper in the Berea grit at No. 10 on the Frank Quinn farm. In Hopewell Township, Licking County, the A. H. Heisey Co. is building a rig on the Burt Weakley farm. In Lot 14, Franklin Township, the Detex Oil & Gas Co. is drilling on the G. E. Cotterman farm.

West Virginia

If it were not for the activity in the gas fields there would be very little doing in the West Virginia fields. In Liberty district, Marshall County, Guy Patterson has a Big Injun sand gasser at a test on the James Clouston farm. The Decem Development Co. got another on the Robert M. Bonar farm. In Church and Clay district, Wetzel County, the Manufacturers Light & Heat Co. and the Wetzel Gas Co. have gassers in the Gordon and Big Injun sands on the Charles Horner and George Fordyce farms. The Hope Natural Gas Co.'s test on the P. G. Jarvis farm in Washington district, Calhoun County, is a gasser in the Big Injpn sand. The Carter Oil Co.'s test on the Simmons heirs' farm, in Smithfield district, Roane County, is a Big Injun sand gasser.

Ritchie and Gilmer Counties

In Murphy district, Ritchie County, the Hope Natural Gas Co.'s test on the H. F. Sullivan farm is dry in the Big Injun sand. On Hughes River, Clay district, the Pittsburgh & West Virginia Gas Co. got a gasser at a test on the W. R. McCullough farm. In Troy district, Gilmer County, the Hope Natural Gas Co. has a gasser in the salt sand on the Mary Fisher farm. In DeKalb district, James Tierney has a gasser in the Big Injun sand on the James Tierney farm. The Imperial Oil & Gas Products Co.'s second test on the W. A. Mason farm in Central district, Doddridge County, is dry in the Big Injun sand. In southwest district, the Carter Oil Co.'s well on lease A of the W. B. Maxwell tract is a gasser in the salt sand. In McKim district, Pleasants County, Howard Hal has a Keener sand gasser in the E. J. and M. B. Wright farm. In Sheridan district, Calhoun County, the Richter Oil Co. has a salt sand gasser on the Z. O. Cooper farm.

Wildcat Gets Oil in Big Lime

In the west branch of Mud River, Jefferson district, Lincoln County, the Columbia Gas & Electric Co. has drilled a wildcat on the Seth Miller farm into the Big Lime formation and showing for a 2-bbl. pumper. The nearest production to this well is 6 miles south. In Smith-Field district, Roane County, G. L. Cabot drilled a test on the S. L. Alderman farm through the Big Injun sand and dry. It is now drilling to the Berea grit. In West Union district, Doddridge County, the Carnegie Natural Gas Co.'s test on the B. F. Jones farm is a gasser in the fifth sand. In New Milton district, the same company has a gasser in the Gordon sand on the Richard Kelly farm. On States Fork, Mannington district, Marion County, S. N. Elliott drilled his test on the L. A. Orndoff farm from the Big Injun to the 30-foot sand. It was then filled up to the Big Injun sand and shot and will be operated from that level. It is good for 15 bbls. a day. On Little Paw-Paw Creek, Paw-Paw district, the Owens Bottle & Machine Co. has a gasser in the Big Injun sand at a test on the Simon Moore farm.

Small Pumper in Kanawha County

On Willis Creek, Big Sandy district, Kanawha County, 2,000 feet south of the Virginia Oil & Gas Co.'s test on the George Rucker farm, the United Fuel Gas Co.'s test on the Harvey Oxier farm is a 2-bbl. pumper in the Big Injun sand. In Grant district, Pleasants County, J. T. Dunn & Co. completed a salt sand duster at a test on the W. T. Dunn farm. In Clay district, Wirt County, W. C. Patterson completed in the Big Injun sand No. 15 on the M. A. Donahoe farm, good for 5 bbls. a day. In Lafayette district, Pleasants County, W. J. McCullough & Co. completed their test on the E. C. Owens farm, showing for a 3 or 4-bbl. pumper and 100,000 feet of gas in the Maxon sand. This location is 800 feet northwest of the Rock Creek Oil & Gas Co.'s test on the Fleming farm.

Fewer Test Wells Starting

The cut in the market is reflected in the amount of new work starting. Some companies that have been fairly active for some months are preparing to curtail operations. In Butler district, Hancock County, a section that has had practically nothing doing since the first of the year, the Mt. Horeb Oil Co. has the rig completed and started to drill a test on the C. S. Truax farm. On Little Grave Creek, Union district, Marshall County, the United States Stamping Co. has a rig completed on the Phillip Monkey farm. On Salem Fork, Ten Mile district, Harrison County, Marsh & Wooddell have a rig up on the T. W. Keesey farm. In Courthouse district, Lewis County, the Hope Natural Gas

(Continued on Page 96)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., June 21.—Six wells finishing in the pay with a potential flush production of only 2,000 bbls., and some eight failures sums the past week in Mexican pools. All of the pay completions were in the Panuco district, while the failures include six in Panuco and two in the South Fields.

The producer completions were: La Corona Petroleum Co.'s No. 86, Lot 1 Cacalilao, rated good for 600 bbls. at 1,650 feet. Mexican Sinclair Petroleum Corp.'s No. 5 and No. 32, Lot 1, same, finished at 1,900 and 1,768 feet, respectively, each 300 bbls. The same company's No. 3 Tananturo, in the old pool, is good for a like volume at 1,850 feet; and No. 2, Lot 7 La Canoa, for 200 bbls. at 2,275 feet; Rich Mex Oil Co.'s No. 44, Lot 1, Cacalilao, for 300 bbls. at 1,845 feet.

The failures in the Panuco district follow: La Corona Petroleum Co.'s No. 93, Lot 1 Cacalilao, is a salt water well at 2,036 feet. English Oil Co.'s No. 3 Tampuche, in the old pool, is a duster at 2,301 feet. Mexican Sinclair Petroleum Co.'s No. 38, Lot 1 Cacalilao, is salt water at 2,110 feet. Transcontinental Petroleum Co.'s No. 93, Lot 4 Cacalilao, is a failure at 2,005 feet despite a hole full from an upper stratum. Weigand and others' No. 1, Lot 1 Cacalilao, is a dry hole at 2,005 feet. In the South Fields, International Petroleum Co.'s No. 2 San Miguel, south of the Tuxpam River, is a failure at 3,145 feet. Mexican Gulf Oil Co.'s No. 37, Lot 190 Amatlan, drilled into salt water at 1,981 feet.

International's Program

International Petroleum Co. (Mexican Seaboard) has announced a comprehensive drilling program for the remainder of this year that embraces no less than 59 tests. Of these, four will be distinct wildcats, i.e., two to be drilled in Naranjo, west of Ebano; one in Tanceme, well south of Panuco, while operations will shortly commence on a test in Santa Amalia, south of the company's holdings in San Miguel south of the Tuxpam River. In addition the company's plans call for the drilling of 49 more wells in its extensive holdings in the Cacalilao sector of the Panuco district (and Naucata), and six more tests in Toteco in the South Fields. International has been a consistent exponent of the diamond drill, especially in wildcat territory, and this system will be continued on its wildcats and in Toteco.

Other Seekers

In addition to the proposals of the International, some comment has already been made on the fact that the Salinas sector, north of the old Chila Field, is being invaded. Proposals for nine tests are on for this sector, several are already rigging. Two tests will be drilled by Mexican Gulf Oil Co., and the remainder, as per present schedule, are by independent operators most of whom have perforce turned their backs on that eastern part of Cacalilao which has suffered considerably of late from salt water, hitting independents especially hard.

May Production

Apropos of salt water invasions in the Cacalilao sector of the Panuco Field, it might be remarked that Panuco produced a little under 9,000,000 bbls. during May, a loss, despite some good wells finished in that month that helped steady the falling curve, of 250,000 bbls. compared with April, this loss being practically all in the Cacalilao sector. Production during May, all fields, totalled say some 12,600,000 bbls.

Panuco-Cacalilao

Routine drilling operations in the Cacalilao sector of the Panuco Field follow: La Corona Petroleum Co.'s operations in Lot 4: No. 87, drilling in white limestone at 1,860 feet; No. 89, in the San Felipe at 1,280 feet; No. 97, in the same at 1,510 feet; No. 100, cemented 8-inch in the same at 1,201 feet; No. 101, drilling gray shale at 350 feet, and No. 106, rigging. In Lot 1: No. 3 is

(Continued on Page 96)

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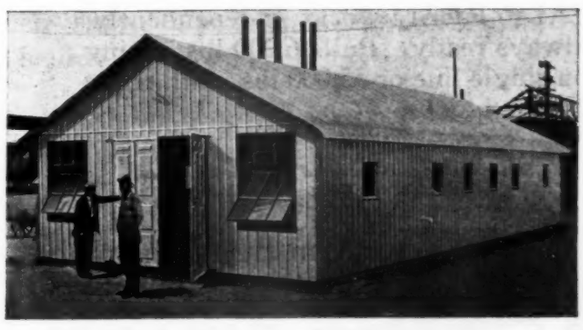

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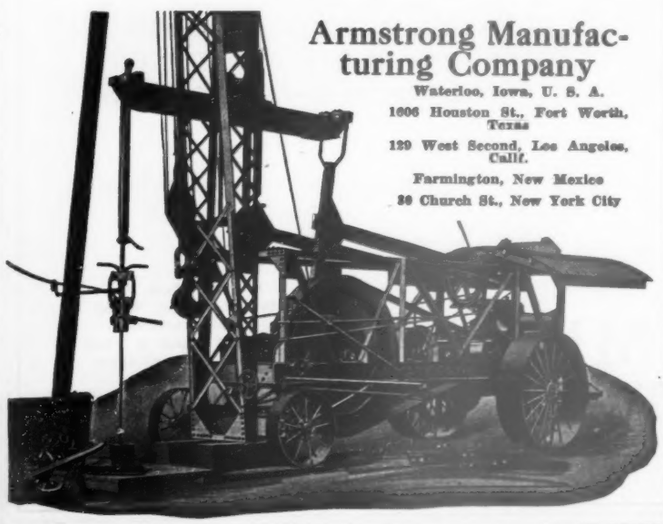

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President A. L. Beaty Of Texas Company Optimistic on Oil

President Amos L. Beaty, of The Texas Co., sees a promising future in the oil industry. Mr. Beaty's company has $164,500,000 capitalization, $88,477,435 surplus and total assets of $370,000,000 and is engaged in the production, purchase, refining and sale of petroleum and its various products.

"In my opinion," Mr. Beatty said, "nothing comparable to the various flush oil fields of last year are likely to be opened up this year, despite the fact that drilling is being conducted on a large scale in many sections of the country, both by the big companies and the small operators. But last year's drilling operations were largely in proven fields, where the chances of failure were much less than in the promiscuous sinking of wells which characterizes a good part of today's efforts.

"Some pools are now looming up in Oklahoma, notably the Cromwell and Stroud pools and deep production had been obtained at Tonkawa. But drilling at Tonkawa is expensive and slow. Current production is less than at the same period last year, notwithstanding that the 1923 output did not reach its peak until September.

Mr. Beaty said he believes most compilations of current consumption of gasoline underestimate, rather than overestimate the amount entering into the country's daily use of this product. "Our own experience," he said, "shows an increase in consumption of at least 30 per cent over last year, exceeding all expectations. We have no real surplus of gasoline stocks at present—just enough to make us feel comfortable, and I believe that many other companies are in the same position. We have no trouble in selling all the fuel oil we can produce; in fact we are unable to supply the urgent needs of many of our old customers."

Referring to the shutdown of drilling operations in the Cromwell Pool in Oklahoma. Mr. Beaty declared that such agreements were almost entirely in local territory, it being contrary to the law to enter into agreement for the curtailment of production or the regulation of prices of oil products.

Commenting on the large stocks of crude oil now above the ground, Mr. Beaty said he would venture the suggestion that, if production which is now running above level, should show a decline for two weeks the companies which have the stocks would consider themselves fortunate.

GAS COMPANY WINNER IN NEW YORK COURTS

NEW YORK, June 23.—Federal Judge Winslow, in the United States District Court, has handed down a decision in the case of the New York & Queens Gas Co., a Consolidated Gas Co. subsidiary, confirming the opinion of Special Master Graham that the $1 gas law is confiscatory and unconstitutional.

Judge Winslow approves the request of the attorneys for the gas company that the master's report be changed in respect to to the power of the Legislature to fix the quality of the gas.

The law says gas must be sold for $1 a thousand cubic feet and that it must be of 650 British thermal units. The master held the legislature within its power in fixing the quality of gas to be served, but Judge Winslow holds that that law, as worded, is not separable in parts and that in its entirety offends the provisions of the constitution.

He further finds that the section of the law which prohibited the collection of a "service charge" is unconstitutional.

The findings of Judge Winslow are very sweeping, particularly as they bring up a point of law which is new in the Consolidated Gas Co. litigation and that of every other gas company in New York affected by the $1 gas law.

Judge Winslow points out that the Public Service Commission, empowered and created by the State Legislature to fix rates, had ordered a schedule of rates with service charges in some instances, and a 525 B. T. U. standard, into effect October 1, 1922, to run for one year.

In May, 1923, the State Legislature passed the acts fixing the $1 rate, the 650 B. T. U. content and eliminating service charges. Judge Winslow holds that in so doing the Legislature has violated a contract which was made between the State, represented by the commission, and the gas companies.

This contract, he holds, is subject to protection under the provisions of the United States Constitution as much as a contract between individuals. He quotes former Chief Justice Marshall on this point, as follows: "That a contract entered into between a State and an individual is as fully protected by the Tenth section of the first article of the Constitution as a contract between two individuals."

Judge Winslow states that the repudiation of the contract by the State legislature, through enacting the new laws, involves the impairment of the contract, which is properly the subject of judicial review. "The court will not presume to comment upon the possible question of business integrity and honor," he said. "If the legislative body may deprive the plaintiff of its property without due process, or set at naught its contract, then all constitutional protection is gone for all persons."

Regarding the effect of the $1 rate on company's operations, the decision holds that "the overwhelming proof is to the effect that the statutory rate would not even cover operating charges, let alone the question of sufficient revenue to approximate a reasonable return on its investment, whether that investment be considered either upon the theory of original cost or present value conditions."

Judge Winslow further held that it is not the function of the court to fix a rate base, but rather that this should be done by the Public Service Commission in the performance of its regulatory functions.

POLISH PRODUCTION OF GAS

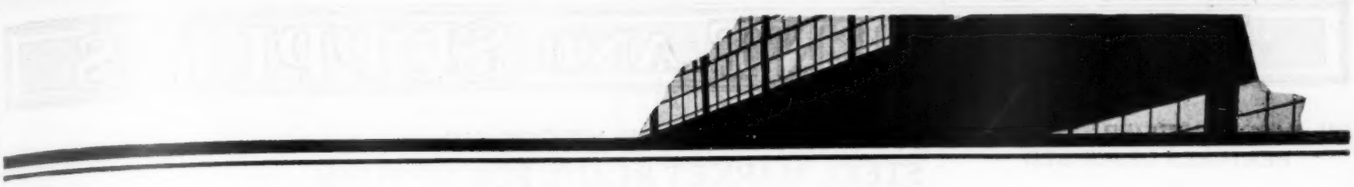
Data covering the production of natural gas in Poland have now become available. Some 370,000,000 cubic meters of natural gas were produced in 1923, compared with 600,000,000 cubic meters in 1913. Although the production of natural gas has decreased steadily during the last four years, the proportion of the output used for the manufacture of gasoline and the quantity of gasoline so derived has increased over the same period. In 1923 about 19,000,000 cubic meters of gas were consumed in the production of gasoline, 2,075 metric tons of gasoline being produced, compared with 922 tons of gasoline obtained from 6,950,000 cubic meters of gas treated in 1922. Exports of natural gasoline increased from 104 tons in 1919 to 703 tons in 1923, the major portion being shipped to Czechoslovakia.

LARGEST DIESEL SHIP

The two new passenger liners which the Shipping Board proposes to build, according to the announcement made by Vice Chairman Plummer, are to be 32,000-tonners, with a speed of 20 knots an hour and are likely to be driven by Diesel engines, although this has not yet been decided. It was stated that 25,000 horse power would be required to drive ships of this size at the speed mentioned. The largest Diesel-driven vessel to be constructed in this country thus far is 21,000 tons.

INDIANA INSURES EMPLOYES

The Standard Oil Co. Indiana will give each of its 25,000 employes in 12 midwestern States free life insurance. One year of service is the only requirement. The minimum death benefit will be $500, reaching $2,000 after ten years' service.



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EQUIPMENT AND SUPPLIES

OIL VAPOR PURIFIER FEATURES DESCRIBED

A bulletin setting forth the various beneficial uses of the Tracy oil vapor purifier has been issued recently by the Andrews-Bradshaw Co., Pittsburgh, Pa. The salient features of the apparatus are set forth as follows: "In refinery practice there is of course a certain amount of carry-over of undesirable liquid particles with the vapor from distillation units. The Tracy oil vapor purifier is designed to remove these liquid particles. By removing all liquid heavy ends from the overhead vapor stream, closer cuts are made possible, re-run is lessened, color is improved end points are lowered and tower and dephlegmator efficiency is increased.

"The purifier is designed and installed to completely remove all liquid particles from the vapors, prior to their leaving the distillation units. Each unit, so equipped, deliveries a clean, dry vapor, uncontaminated by high boiling point liquid fractions. The basic principle of the purifier is essentially that of a low velocity multiple baffle separator. The multiplicity and staggered arrangement of the purifier baffles is such that all liquid particles whether of mist or bubble form are literally scrubbed from the main vapor stream.

"The liquid scrubbed from the vapor stream, as it serpentines through the baffles, flows down each baffle to the floor plate and to the drainage chamber. This chamber is entirely separate from the dry vapor conduit, so there is no opportunity of cleaned vapor again picking up or making contact with the separated liquid material. The stream of separated liquid may be directed back to the still, or removed externally, as desired."

The purifiers are reported applicable to skimming stills, particularly combination fire and steam stills, where the apparatus is interposed in the vapor stream directly inside the still in the region of low velocity, where the high boiling point fractions are scrubbed and completely eliminated from the vapor stream. The application of the purifiers to dephlegmators and fractionating towers is becoming widespread also.

"In cracking processes it is highly important, from the standpoint of production cost and maximum output, that all traces of cracked residuum be eliminated from the distillate obtained," the bulletin adds. It was therefore early realized that mist separators were necessary, particularly where high carbon charging stocks were used. The early types of these separators were crude and very inefficient, and in some cases aggravated rather than improved results. With the Travy oil vapor purifier it has been demonstrated that objectionable heavy ends in the liquid phase can be completely and efficiently removed from the pure vapor phase desired."

The purifiers are also said to have been advantageously used on natural gas line separators and in various steps of the natural gasoline extraction business.

BOOKLET ON DRILLING

"Drilling Wells with Reid Gas and Oil Engines" is the title of a new bulletin recently issued by the Joseph Reid Gas Engine Co. of Oil City, Pa. Bulletin No. 28, as it is called, gives briefly the advantages of drilling wells with gas and oil engines, followed by a number of reports of wells drilled by Reid Engines in various oil fields. The book is of interest to every one engaged in cable tool drilling. The Joseph Reid Gas Engine Co. will gladly furnish it to those interested, upon request.

OIL COUNTRY DEMAND KEEPS UP; STEEL MARKET READY FOR UPTURN

By B. E. V. Luty

PITTSBURGH, Pa., June 23.—Demand upon the pipe mills for oil country goods keeps up very well, there having been little, if any diminution in the past two or three weeks. The demand has not averaged as heavy since April as it averaged in the first three or four months of the year, when the jobbers were stocking up, as the tendency lately had been to liquidate excess stocks.

All buying of well drilling supplies is for the quickest possible delivery, requiring jobbers to maintain an assortment of stocks, while mills find that they also must have full stocks or they lose orders on account of delivery. In April, when the delivery pressure for oil country goods and merchant pipe decreased, the mills turned their attention to building up their own stocks, which are now of very fair size.

Buying of merchant pipe has picked up a little, indicating better distribution by jobbers as well as liquidation of their extra stocks.

As a result of fair demand in both lines, the pipe mills are able to keep up a fair operation, about 65 per cent of capacity, possibly nearer 70 per cent. This makes a very favorable comparison with the other steel finishing branches, as only the rail mills are operating at a higher rate than the pipe mills.

Pipe Prices Rigidly Held

Pipe mills are holding their prices rigidly and punctiliously, on the basis of the lists of April 19, 1923. This rigidity is due in part to realization that it would not take much to "start something." Nearly all finished steel products have declined more or less from their prices of last year, and so the pipe mills have to defend their position. Each mill is watching the other mills for signs of price cutting and knows that the other mills are watching it, hence, they are all very careful. More than two months ago there were predictions that mill prices of tubular goods would soon decline, but the predictions have failed entirely and there are now good chances that pipe mills will get through without any decline.

There continues to be some shading in the secondary market, particularly on merchant pipe, but there is not as much of this as there was, and there is less occasion since the shading started for the purpose of liquidating stocks and the object is largely accomplished.

As to the steel trade in general, the market has probably gained a little inactivity in the past week. Taking steel products as a whole, the buying during May was at about 30 per cent of capacity, while now it may be a trifle more than that. Production of finished steel is at about 50 per cent of capacity, the difference between recent and present buying being made up by old orders, for rails, freight car material, etc. The rail mills are running best, pipe mills coming next, with tin plate mills at about the same rate, tin mill operations having been at about 70 per cent at the beginning of this month, since dropping to 65 per cent or a little less. Sheet mills are doing close to 50 per cent, with the wire, bar, shape and plate mills all at less than 50 per cent. The rate of steel ingot production is about 45 per cent, but mills are rolling up some stock ingots as well as semi-finished steel.

Steel Decline Checked

The steel market as a whole has not been declining in the past 30 days. Bars, shapes, plates and sheets had considerable declines in April, and by the middle of May wire products were down $2 a ton from the old prices. Since then there has been no decided change. Bars, shapes and plates have declined somewhat in the Chicago market in the past two or three weeks, but on the other hand, the market along the eastern seaboard is steadier, showing less divergence from the Pittsburgh basis. In sheets the American Sheet & Tin Plate Co., without formally announcing any price change, is meeting the $4 a ton concession long given by independents, while there are fewer independents going beyond a $4 concession, so that the sheet market is distinctly steadier.

The dullness of the steel market for say three months past has been due to liquidation of stocks of steel by jobbers and manufacturing consumers liquidation being also required in some manufactured goods, such as automobiles. The liquidation of stocks of steel is now almost completed. This is evidenced by there being more widespread buying, many buyers making purchases after being out of the market for some time. The purchases are small individually, but they show a wide range in sizes called for, indicating low stocks. This is noted with particular plainness in merchant bars.

Ready for Upturn

The general feeling is better and the steel market is getting ready for an upturn. The turn will probably come long before the summer is ended, for the steel market delights in breaking precedents. The "dull summer" idea has been more or less prevalent, but as a matter of fact that precedent has been broken once already. In July, 1921, when there was a decided upturn.

The Humble Oil Co. has let five storage tanks, involving 1 000 tons of plates, to the Kansas City Structural Steel Co. The Dixie Oil Co. has placed an order of similar size with the Mount Cooper Boiler & Iron Co. There is inquiry in the market for oil storage tanks involving some 15.000 to 20.000 tons of plates, including one from the Marland Oil Co. for from 20 to 40 tanks.

PORTABLE COMPRESSORS FOR CONTRACTORS' USE

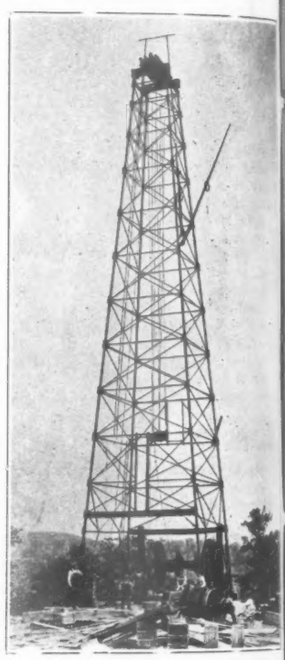
The rapid increase in the applications of compressed air for many contractors' outdoor purposes has called for the development of portable air compressors in a great variety of types and capacities. The new Sullivan 103-foot gasoline engine-driven portable unit is a size and type which past experience has proved to be very popular and to be adapted to many purposes.

For example, it may be employed to run a rotator hammer drill in heavy rock excavation; one or more concrete breakers, clay spaders, pneumatic riveters; for sand blasting and operating paint sprays; in building construction, for operating tie tampers or for calking pipe lines, and for many other purposes which will readily suggest themselves.

This new Sullivan compressor is known as the WK-311 type. It is direct connected to a Buda four-cylinder four-cycle gasoline engine, and as stated, has a vertical two-cylinder, single acting, single stage unit, designed especially for this service. Lubrication is automatic and cooling water for the engine and compressor are supplied by a circulating pump in the same system. The air valves are the well-known Sullivan "wafer" type, characterized by simplicity, strength, low clearance losses and quietness in action. The compressor, engine and equipment are mounted on a one-piece steel casting of very rigid construction. The 12-gallon gasoline tank and the 12 by 48-inch air receiver are carried horizontally in cradles at the rear of the truck body, and all working parts of the compressor are protected when not in use by sheet steel sides which are locked in place against the base and the end canopy top, thus protecting the outfit from the weather and from theft of equipment.

This machine is ordinarily mounted on a steel wheel truck for highway use, weighing 3,235 pounds in this form. It may, however, be mounted on a trailer truck with rubber tires for use on city streets or on a wooden skid if maximum portability is not necessary. The machine may also be set on a Ford truck for this purpose, using the No. 9 Olson extension with longitudinal spring supports.

STEEL STANDS TEST



Replacing wooden parts of drilling rig after five-hour fire. Steel derrick and other steel equipment undamaged.

One example of the benefits to be derived from the use of modern equipment is seen in a recent occurrence at Well No. 4 of the Superior Oil Corp., in the southwest quarter of Section 3-23-5, Hominy district, Oklahoma. During a storm lightning struck the top of the derrick and ran down the ⅜-inch drilling cable, parting it, just as the crew had started lowering the 10-inch tools into the hole. The tools were dropped 1,530 feet. The driller and tool dresser were knocked to the ground but were unhurt except for the burning of the tool dresser's hands.

The well was making about 2,000,000 feet of gas from an upper sand and caught fire from the bolt of lightning. It burned for five hours before the blaze was extinguished. All woodwork in the derrick was destroyed, including the walking beam, headache post, wooden band wheel, board siding, main sills, floor, etc. The rig, which was a heavy 4-inch Lee C. Moore type drilling derrick, equipped with steel bull wheel, steel calf wheel and tug rim for the band wheel and a chain-driven sand reel were not damaged except for the loss of the wooden brake cants in the bull wheel and the calf wheel.

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OIL WELL CEMENTING

Scientific Oil Well Cementing is a Paid-Up Insurance Policy covering the most serious hazards that an oil well is subject to---water, collapse of casing, gas blow-outs, etc., etc.

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Duncan, Oklahoma

EQUIPMENT AVAILABLE FOR ALL FIELDS

NATURAL GAS DEVELOPMENTS

MANY GAS OPERATIONS IN ROCKY MOUNTAINS

CASPER, Wyo., June 21.—The Producers & Refiners Corp. is laying pipe line from Baxter Basin Field, in Sweetwater County, Wyoming, to Rock Springs on the Union Pacific. The line is to supply gas from the field to the city and work is being done by the Hope Engineering Co. of Mt. Vernon, Ohio.

The Baxter Basin Field has long been known as a possible field and was drilled in 1915 without results, later, in 1921, the Midwest, Producers & Refiners, Ohio, and other firms, again started developing the area which resulted in the finding of several large gassers but no oil, it looks now as though the Baxter Basin would become a large gas supply point, but the hopes of an oil development are about done. The field averages about 2,500 to 3,400 feet in depth and covers about 15 square miles of what is considered productive area.

The Producers & Refiners secured a franchise from the City of Rock Springs and unloaded several cars of pipe for the proposed line last winter. This pipe is now being strung by trucks and the Hope Engineering Co. is shipping ditchers into the territory to dig the trench, the line is to be completed by late summer and will then deliver gas from the Producers & Refiners leases to the city mains.

The Ohio Oil Co. also found a large gas supply as well as the Midwest and these wells have been shut in since completed. Shortly after the field showed for a gas area the Ohio Oil Co. made a survey from Baxter Basin west across the southwest corner of Wyoming into Utah and then to Salt Lake City and this line is still in abeyance pending the settlement of some difficulties met at Salt Lake City where the steel plants there furnish manufactured gas through a city distribution system.

A survey for the Ohio's proposed line to Salt Lake City was made by the Illinois Pipe Line Co. and this firm is expected to lay the line when it is decided to build same. The Salt Lake City line will probably be a 12-inch line with bolted couplings.

The Ohio Oil Co., drilling in the Oregon Basin is down 1,780 feet and has cased off a gas flow that was estimated at 8,000,000 feet. The gas was found at 1,762 feet and it was cased so that the Ohio can come back up the hole and still recover if nothing is found deeper. While the Oregon Basin is expected to prove an oil bearing structure, the Ohio has an outlet for any gas production through the gas line to Billings, Mont., that supplies central Montana cities with gas. F.B.T.

GOOD GASSER IN GRAY COUNTY

AMARILLO, Tex., June 21. — A flow of gas estimated at 25,000,000 has been encountered in the Henshaw well, 12 miles northeast of McLean, according to reports reaching Amarillo. This gas is said to have been found at a depth of 2,060 feet.

The Holmes test north of McLean is setting casing at 3,030 feet, preparing to drill deeper. This test is being watched with a great deal of interest by oil men, and it is believed that a real producing sand will be encountered within the next 100 feet.

SAYRE GAS FRANCHISE

SAYRE, Okla., June 20.—The special election held on the question of a franchise permitting the Sayre Fuel Supply Co. to lay gas mains and engage in the business of supplying natural gas for fuel purposes brought out a very light vote, but the majority was in favor of the franchise, 254 to 39.

QUESTION OF FAIR AND REASONABLE RATES DOMINANT IN GAS BUSINESS

By H. A. Wallace

Former President Natural Gas Association of America

The recent report of the Bureau of Mines showed that in 1922 the total consumption of natural gas in this country was 388,842,000,000 feet and the average price, 21.9c per thousand feet. When we take into consideration the fact that artificial gas is today readily sold for approximately $1.25 per thousand feet, we find no difficulty in appreciating the advantages enjoyed by our consumers, or the fact that the natural gas companies are not by any means receiving a fair price for their product.

This question of fair and reasonable rates, as we all know, is today foremost in the minds of all natural gas men, inasmuch as it is becoming every day more evident that without adequate rates we cannot undertake the burdens of location and development of new fields, without which, in turn, the public cannot hope for a continuance of the service it demands.

How Costs Have Increased

We all know that in the Eastern fields is is necessary today to drill four of five wells to provide the same amount of gas that one well formerly produced, and in addition it is necessary to spend large sums of money in building compressor stations to force the gas to market. When factors like these are added to the general increase in cost of labor and materials, from which we suffer, we feel as most other industries, it is evident that we have a strong case to present for fairer rates.

Rates can also, when properly handled and presented in their true light, become a powerful instrument for the education of the consumer in the need of conservation and economical use of his gas supply. This is especially true of communities close to the source of supply. In a large number of communities served with natural gas, the rates charged are so extremely low that there is no incentive for the consumers to use gas economically, while at the same time there is no incentive for the companies to spend money to maintain a service in which there is no hope of a reasonable return on their investment. That this is an unsound condition must be evident to everyone.

The fact that very few people realize the immense advantages of gas fuel and its cheapness in comparison with almost all other necessities of life, was brought home to me forcibly recently in reading some items of the early history of the gas companies in several Ohio towns.

In at least one of these town the initial rate for gas was $6 per 1,000 feet. Think of that. This, too, was 70 years ago when measured in the other necessities $6 must have been worth at least $20 today. And yet the people of those towns were so glad to get gas, even at that price, that the turning on of the service was made the occasion of public celebrations. We need to remind the people in our communities of these things.

Service Charge Equitable

It comes to my notice from all parts of the country where natural gas is used that natural gas executives and engineers in making a closer study of economics found necessary because of the increasing costs of production and distributing natural gas have recommended the service charge; some indeed say that it may mean the very life of the industry. This comes about largely because as the supply of natural gas available for sale is less and the price is consequently rising, the consumer buys less of the commodity; the householder strives with commendable thrift to keep down the family budget of expense and therefore curtails his use of gas to the lowest degree in all his appliances. The effect upon the gas company's income is that with the system of flat rate charges there is not a sufficient amount of business conducted to support the large investment demanded to give dependable natural gas service; this effect is made acutely serious as the scarcity of gas and the higher cost of it impels the industrial user to look for what he things may be a cheaper competing fuel for his mill consumption.

The natural gas industry is in the situation where it is no longer able to supply lavish quantities of natural gas at low flat rates; the old system under which users of large quantities paid not only for the gas they used but carried the expense caused by the smaller users has broken down; the cost of the overburden plus the higher cost of the gas influences the large user to curtail his fuel consumption. The right and fair thing is that each consumer should pay the cost of his own service and not be a burden upon his neighbor, and it is the reconstruction of rate tariffs upon this principle that will preserve the natural gas service as the supply falters.

The service charge, or customer charge, as it is now more accurately called, is based on the actual monthly expense which each consumer causes the gas company and whether or not any gas may be actually used in such month. Each honest American desires to pay his own way, and if he only uses 500 feet of gas in a month and pays 25 cents for that amount, he has not paid the cost of reading his meter, the cost of bookkeeping hire, making out and sending his bill, the postage, the interest on the cost of his meter and street connections, and such items, for these items, which of course vary in different plants, run from 50 cents per month per consumer to 75 cents per month per consumer and to them should be added the cost of the 500 feet of natural gas used. In this enumeration I have omitted some of the customer expenses which ought rightly to be included, but I am only representing the subject in a general way and not with engineering exactitude.

Conservation Is Important

The whole theory and principle of a service charge is, therefore, to take care of certain constant expenses, which must be met somehow, and which, if not met by a service charge, must be added to the rates for gas by a considerable increase in them. That this would be inequitable, as among consumers who burn different amounts of gas, is quite clear, because the increase per 1,000 feet would affect their bills by different amounts, according to the amount of gas which each burns. Some consumers, therefore, would be paying each month more than their share of customer service expenses, and others less, although the amount that each really owed would be the same.

It may not be amiss, if I touch briefly on a subject of technical character, which in my opinion is of so grave importance that it justifies particular mention. I refer to the conservation of proven territory and leaseholds by the use of adequate precautions in drilling, completing and abandoning wells. The features I refer to are along the lines of standardizing in various fields on the proper methods of completing a gas well, also the correct manner of operating it after completion, especially after showing water or oil, as well as seeing that proper care is taken to prevent wells

(Continued on Page 120)

ONTARIO GAS BOARD GRANTS STEP-UP RATE

CHATHAM, Ont., June 20.—The Natural Gas Board of Reference for Ontario has given its decision on the application by the Sterling Natural Gas Co. of Port Colborne for a rate increase. The company applied for a rate of $1.25 per 1,000 feet, but the rate fixed by the board is a sliding scale of 85 cents to $1.05, according to the amount of gas consumed, a step-up rate being provided.

The board has also fixed rates for a number of townships where gas is supplied by the Union Natural Gas Co. and where, until recently, under the "transmission franchise" proviso increases on the original franchise rates could not be granted. In dealing with these townships the board has adopted the zone system of rate-fixing, with a step-up rate. No meter rents are ordered.

In Zone No. 1, the gas producing area, including the township of Dawn in Lambton County, and the townships of Tilbury East, Raleigh, Romney and Dover and the village of Merlin in Kent County, the rates per 1,000 feet (net) are as follows: First 10,000 feet, 40 cents; next 10,000 feet, 45 cents; above 20,000 feet, 55 cents; with 5 cents per 1,000 additional in all cases where bills are not paid within 10 days. These rates are for the seven winter months; from May to September, inclusive, there is a flat rate of 70 cents net or 75 cents gross.

For Zone No. 2, townships of Harwich, Howard, Chatham and Camden in Kent County, and Tilbury West and Tilbury North townships and Comber village in Essex County, the summer rate is 75 cents net or 80 cents gross. The step-up winter rates are: For the first 10,000 feet, 50 cents per 1,000; for the next 10,000, 55 cents; and for all over 20,000 feet, 65 cents. These are net rates, the gross being 5 cents per 1,000 higher.

In Zone 3, townships of Sombra and Enniskillen in Lambton County and townships of Sandwich South, Rochester and Maidstone in Essex County, the rates are 5 cents per 1,000 higher than in Zone No. 2. The rates became effective June 1, 1924, and continue till amended by another order.

TO PIPE ROGERS GAS TO CALGARY

CALGARY, Alta., June 20.—The cities of Calgary and Lethbridge, it is understood, have entered upon preliminary negotiations to secure gas from the new Rogers gasser at Coutts brought in by the Canadian Oil & Refining Co. This well can be utilized with small outlay as it is only 25 miles from the Foremost Field which will be linked up with the Bow Island pipe line this summer. Turner Valley gas, now supplied Calgary, is highly odorous whilst that from the Rogers well is sweet. According to a recent test the pressure in the well is increasing, the flow having a force of 945 pounds, or an open flow of 65,000,000 feet per day.

TO DEEPEN SCHENCK WELL

SHAMROCK, Tex., June 21. — The Cosden Oil & Gas Co. has purchased a half interest in the Schenck gas well a few miles north of Shamrock, Tex., and part of the Schenck block of leases and is arranging to drill the hole deeper. The well gauged 40,000,000 feet of gas daily from a sand at 1,985 feet when completed. The gas is said to be the wettest found in the Panhandle and it is believed that under it will be found the oil sand that has been found in the Whittington well, drilled on the Williams and Laycock ranch, 6 miles northwest of here.

The First Full Diesel Used on a Pipe Line was a Worthington

The first Diesel oil engine used for driving a pipe line pump was a 300 H. P. Worthington horizontal four-cycle Diesel. The same Company that purchased this engine bought other Worthington Diesels aggregating over 19,000 horsepower.

WORTHINGTON PUMP AND MACHINERY CORPORATION

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WORTHINGTON

Deane Works, *Holyoke, Mass.*
Blake & Knowles Works *East Cambridge, Mass.*
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Laidlaw Works, *Cincinnati, Ohio,*
Hazleton Works, *Hazleton, Pa.*
Gas Engine Works, *Cudahy, Wis.*
Power & Mining Works *Cudahy, Wis.*
Snow-Holly Works *Buffalo, N. Y.*
Epping-Carpenter, *Pittsburgh, Pa.*

MEN KNOWN IN OILDOM

Arthur C. Veatch

Arthur C. Veatch, chief geologist of the Sinclair Consolidated Oil Corporation, has devoted his business life to scientific research and investigation and is recognized today as one of the best informed men in his profession. He attended the University of Indiana in 1896 and 1897, Cornell University in 1898 and 1901 and the University of Wisconsin in 1905. He was assistant geologist for the Louisiana Geological Survey from 1898 to 1900 and was connected with various geological surveys in the South until 1906 when he went with the United States Geological Survey.

His foreign experience dates from 1910, when he traveled through Trinidad and Venezuela for the General Asphalt Company. From 1913 to 1919 he was in foreign work for S. Pearson & Son, Ltd., of London. He became consulting petroleum technologist for the United States Bureau of Mines in 1919, in which year he also was given charge of the exploration department for the Sinclair Consolidated Oil Corporation. He is a member of many scientific societies in the United States and foreign countries and has many publications to his credit.

PERSONAL PARAGRAPHS

W. D. Turner of Detroit, Mich., with oil interests in Rocky Mountain territory, was a recent Casper, Wyo., visitor.

* * *

Emil H. Steiger of Milwaukee, president of the New York Oil Company, spent some time in Casper, Wyo., recently.

* * *

A. E. Hartman, Fort Worth, Tex., geologist, is moving to San Angelo, Tex., opening offices in the Travis Building.

* * *

Harry J. Parker after looking over his producing properties in Texas and Oklahoma has returned to his home in Pittsburgh, Pa.

* * *

R. C. Bretschneider, vice president of the Midwest Refining Company, spent a day in Casper, Wyo., en route from Billings, Mont., to his home in Denver, Colo.

* * *

Mrs. A. B. Williams, interested in the E. T. Williams Oil Company, has been looking after business interests in Casper, Wyo., after a winter spent in Los Angeles.

Thomas B. Romine, geologist of the California Company, is in Casper, Wyo., for the present on work for the company. The California headquarters for Wyoming are located at Rawlins.

* * *

A. L. Rizan, formerly specialty salesman of the Hoyt Metal Company, St. Louis, is now district sales manager of Jones Oil Well Reamer Company, Tulsa, with headquarters at Wichita Falls, Tex.

* * *

J. H. Clark, manager of the Midnorthern Oil Company, with office in Billings, Mont., accompanied by V. W. Shoemaker, field superintendent for same company, has returned after a brief stay in Casper, Wyo.

* * *

George W. Hoffman, general manager of the Oil Well Supply Company of Pittsburgh, Pa., is paying a visit to Vancouver with a view of establishing a distributing branch there to serve the Alberta oil fields.

* * *

Arthur A. Ayres of Fortville, Ind., spent a few hours at Toledo, Ohio, recently. Mr. Ayres is president of the Union Gas & Oil Company, operating extensively in the North Weir sand field of eastern Kentucky.

* * *

John Moorehouse, of Breckenridge, Tex., has been appointed deputy supervisor for the Oil and Gas Division of the State Railroad Commission, succeeding W. F. Arnold, resigned. The appointment became effective June 15.

* * *

H. C. George, in charge of the United States Bureau of Mines investigation work in the Ardmore, Okla., district, has accepted appointment as director of the newly elected school of oil field managers of the University of Oklahoma.

* * *

Dr. C. W. Washburn of New York is examining the Teapot Dome for the Government attorneys in the suit against the Mammoth Oil Company. Doctor Washburn is familiar with the Wyoming fields through many previous surveys.

* * *

David Donoghue, consulting engineer and engineer of Houston, Tex., has been named a regional director of the American Association of Petroleum Geologists. His territory will include the coastal belt of Texas and Louisiana.

* * *

John B. Corrin, vice president of the Hope Natural Gas Company, attended the funeral of R. G. Altizer, formerly solicitor for the Hope Company, who was struck by lightning and instantly killed on the golf grounds at Charleston, W. Va.

* * *

John K. Knox, geologist, of Houston, Tex., has moved from that city to Denver, Colo., where he will be associated with Irvine E. Stewart. Mr. Stewart was formerly located in Billings, Mont., and recently established an office in Denver at 420 Patterson Building.

* * *

W. Y. Dilley, general attorney for the Iowa Oil & Refining Company and president of the Waurkia Rotary Club, has gone East to attend the international convention of Rotarians at Toronto, Ont., and with Mrs. Dilley will visit New York, Pennsylvania and Indiana.

* * *

John (Jack) J. Evans, general field superintendent for the Hope Natural Gas Company in West Virginia, with headquarters at Clarksburg, is in Johns Hopkins Hospital at Baltimore where he underwent a major operation two weeks ago. He is reported recovering from the operation, which was a success.

* * *

A. C. Fieldner, superintendent of the Pittsburgh Experiment Station, will represent the Bureau of Mines at the World Power Conference in London. He sailed June 19 and while abroad will make a thorough study of foreign progress in mining and fuel research.

* * *

Ralph Pembrooke, petroleum engineer, who has been in South America for the past year with the Standard of New Jersey in the Venezuela country, is back in Casper, Wyo. Mr. Pembrooke was formerly a civil engineer and ran an instrument when the Burlington built its railroad through Wyoming.

J. C. Hoffman, for many years with the Union Petroleum Company, resigned his position with that company recently and is associated now with the Tiona Petroleum Company. The latter concern has increased its office space in the Widener Building, Philadelphia, and has improved its plant at Holmesburg Junction, Philadelphia.

* * *

Naval Commander H. A. Stuart, stationed at Casper, Wyo., as the Casper representative of the Navy receiver for the Teapot Dome, has returned to that city after a trip to Washington, where he was in conference with the heads of the Navy Department.

* * *

Omer Don Crites of Iowa Park and Miss Orlena McCombs of Waxahachie, Tex., were united in marriage at the home of the bride's parents last week. Mr. Crites is with the executive department of the Gulf Production Company at Fort Worth. They will be at home at 924 South Henderson Street, Fort Worth.

* * *

Mr. and Mrs. C. B. Sage of Toledo, Ohio, are making an auto tour through the East. Mr. Sage is an oldtime operator in the Pennsylvania and Lima fields and is now operating in the Rudolph Field of Wood County, Ohio, under the name of the Rany-Sage Oil Company. Mr. and Mrs. Sage will spend some time in New York City and Brooklyn.

* * *

At the annual picnic of the employes of the sales department of the Magnolia Petroleum Co., southern division, held at the San Jacinto Battlefield grounds, A. F. Denniston, of the land and lease department, acted as master of ceremonies. Mr. Denniston has been connected with the Magnolia company since its organization. He is one of the few surviving pioneers of Petroleum Centre and Pithole days.

* * *

M. Y. Williams of the University of British Columbia and formerly on the staff of the Geological Survey of Canada, is now in southern Alberta at the head of a geological party which will conduct investigations in that field this summer. He is sanguine on oil prospects in that field but considers that oil will be found at a considerably greater depth than in the Kevin-Sunburst Field just across the line in Montana.

* * *

F. C. Vancleave, superintendent of the Gulf Pipe Line Company, with Beaumont, Tex., as headquarters, and C. E. Hanratty, district foreman for the same company in the Goose Creek district, are in the Powell and Mexia fields on official business. Both are experienced pipe line men in the handling of either heavy or light gravity crudes. Mr. Hanratty was born in Parker, Pa., but has been in the southwestern fields for many years.

* * *

William Francis, district manager for the National Transit Pump & Machine Company, with Denver as headquarters, accompanied a party of pipe line engineers representing the Pan-American Petroleum Company during an inspection of lines and stations in South Texas and North Louisiana. William Cushing, a pioneer pipe line man, who has laid lines in the East, in the Southwestern and California fields, was a member of the party. They were accompanied to Shreveport by W. H. Gaither, of Houston, district manager in the Southwest for the National Transit Company.

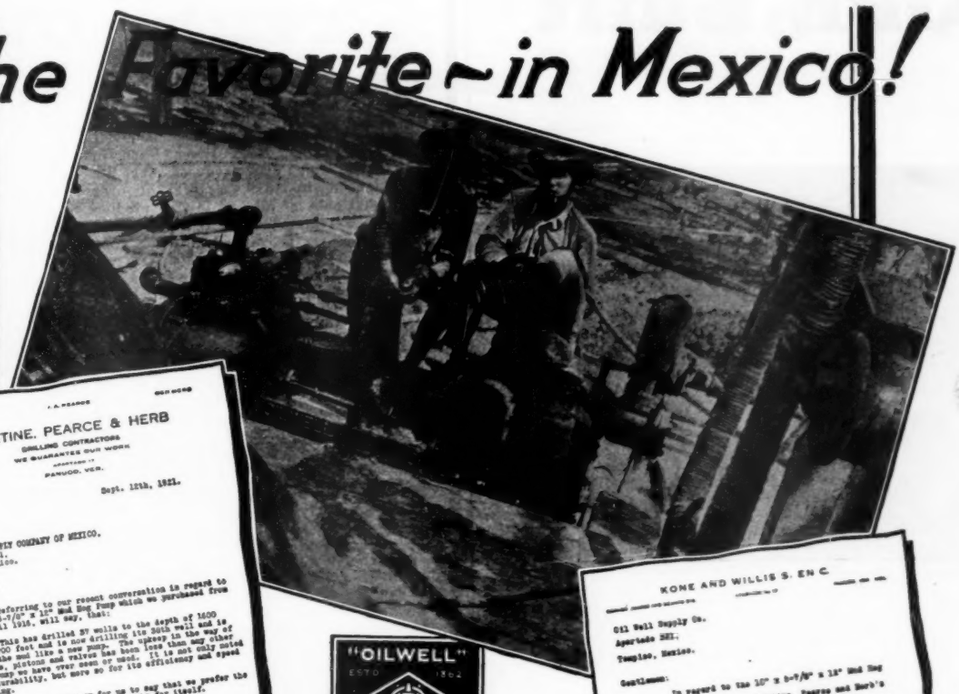
* * *

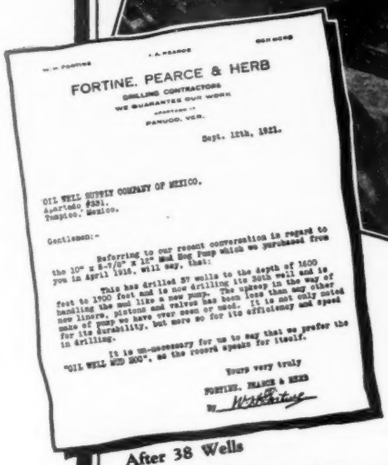
With the transfer of J. C. Tipton to the Chicago office of the Galena Signal Oil Company, R. P. Williams has taken the duties of sales manager for this concern in the Houston, Tex., territory. The wholesale part of the selling is being added to that of retail sales manager, a place Mr. Williams has held for some time. Mr. Tipton became manager of sales for the Houston district upon the moving of Sam Lane to New York.

* * *

R. D. Farish, in charge of the land and lease department of the Humble Oil & Refining Company in Houston, Tex., for five years, has resigned to enter the leasing business on his own account. Before going with the Humble, Mr. Farish was connected with the Gulf Production Company in both the North and South Texas fields. He is a brother of W. S. Parish, president of the Humble Oil & Refining Company.

The Favorite ~ in Mexico!





FORTINE, PEARCE & HERB

DRILLING CONTRACTORS

WE GUARANTEE OUR WORK

TAMPICO, MEX.

Sept. 12th, 1921.

OIL WELL SUPPLY COMPANY OF MEXICO.
Apartado #321.
Tampico, Mexico.

Gentlemen:-

Referring to our recent conversation in regard to the 10" x 8-7/8" x 12" Mud Hog Pump which we purchased from you in April 1916, will say, that:

This has drilled 37 wells to the depth of 1600 feet to 1900 feet and is now drilling its 38th well and is handling the mud like a new pump. The upkeep in the way of new liners, pistons and valves has been less than any other make of pump we have ever seen or used. It is not only rated for its durability, but more so for its efficiency and speed in drilling.

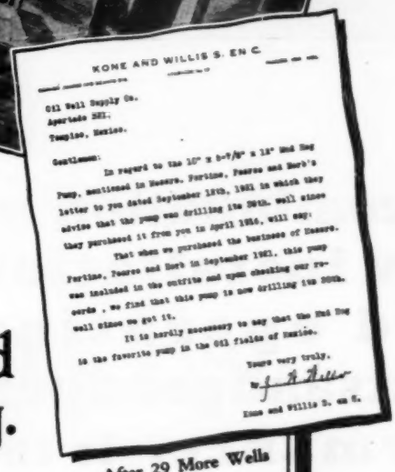
It is unnecessary for us to say that we prefer the "OIL WELL MUD HOG", as the record speaks for itself.

Yours very truly

FORTINE, PEARCE & HERB

By _____

"OILWELL"
ESTD 1902
TRADE MARK



KONE AND WILLIS S. EN C.

Oil Well Supply Co.
Apartado 321.
Tampico, Mexico.

Gentlemen:

In regard to the 10" x 8-7/8" x 12" Mud Hog Pump, mentioned in Messrs. Fortine, Pearce and Herb's letter to you dated September 12th, 1921 in which they advise that the pump was drilling its 38th. well since they purchased it from you in April 1916, will say:

That when we purchased the business of Messrs. Fortine, Pearce and Herb in September 1921, this pump was included in the outfits and upon checking our records, we find that this pump is now drilling its 80th. well since we got it.

It is hardly necessary to say that the Mud Hog is the favorite pump in the Oil fields of Mexico.

Yours very truly.

By _____

Kone and Willis S. en C.

After 38 Wells

After 29 More Wells

67 Wells ~ and still going strong.

This remarkable achievement of an "Oilwell" Mud Hog Pump has so sold the Mexican fields that today "Mud Hogs" are the favorites, as attested by the letters herewith.

8 years of continuous service,
67 wells drilled,
100,000 feet of hole,
still running like new on the 68th well.

What "Mud Hogs" have done for others, they will do for you.

Write for "Oilwell" Mud Hog Bulletins Nos. 43 and 46, or get copies at any of our 100 branches.

OILWELL SUPPLY CO

NEW YORK - LONDON - TAMPICO - PITTSBURGH, U.S.A. - SAN FRANCISCO - LOS ANGELES

World's Largest Manufacturers of Oil Field Equipment

Los Angeles. the Burlington built its railroad through Wyoming. Refining Company.

HOPE Built

A combination of low installation and operating costsandgoodperformance, is the reason for the second installation within a year of duplicate 160 H. P. Reeves gas engine compressor units by a large eastern gas company.

Branches Pittsburgh, Penna. Tulsa, Okla. Casper, Wyo.

HOPE ENGINEERING & SUPPLY CO. Mt. Vernon, Ohio, U.S.A.

Consulting and Contracting Engineers in Natural Gas and Oil.

COLORADO OIL NOT TO BE DISTURBING

(Continued from Page 32)

throughout the sand body, so there yet remains to be seen the future of the Moffat Pool.

Starting Additional Tests

The Texas Production Co. is now starting up on five additional wells spaced so as to thoroughly test the structure which has a closure of 800 feet and covers about 4,000 acres. For comparative purposes the Moffat Dome is about the type of the Rock River Field in Wyoming, which has produced since its development in 1919, a total of over 7,000,000 bbls. of oil and is still producing at the rate of more than 1,000,000 bbls. a year, the difference being that Moffat Pool is probably somewhat larger than the Rock River structure, besides having a much thicker body of sand.

In the immediate region surrounding Moffat Pool there are several very promising structures where the same producing sands may be reached by the drill, chief among them being the Iles Dome, which is about the same size as the Moffat Pool structure. This dome is now being prospected by three different companies. In addition to the Iles structure should be mentioned the Beaver Creek anticline, covering possibly 600 acres within the closing contour, and Tow Creek, about the same size. Sage Creek, Fish Creek, and Williams Park, have fair possibilities. In the same category is Devils Hole, upon which the Richmond Petroleum Co. drilled a 4,800-foot dry hole, stopping about 300 feet above the sand that is producing at Moffat Pool.

While northwestern Colorado probably excels northeastern Colorado in the matter of potential oil reserves, nevertheless this advantage is offset to some degree by its geographical location and isolation from refining centers and markets. The region is sparsely settled, extremely remote, and transportation facilities are lacking and will prove costly to construct. The Denver & Salt Lake Railroad, known as the Moffat Road, from Denver to Craig, a distance of 244 miles, offers the only present outlet for this district. The road is now in the hands of a receiver and not much can be expected until the Moffat Tunnel, now being constructed by the State, is completed, at which time the existing delays in service during the winter months caused by the snow-covered pass at the head of South Boulder Creek will be eliminated. The tunnel will reduce the grade from a maximum of 6 per cent to 2 per cent and will decrease the distance by 20 miles and the elevation from 11,000 feet to 8,500 feet. The main line of the Union Pacific in Wyoming lies some 100 miles to the north of the heart of the prospective area, but the country between is quite broken, so that an extension south to Craig would involve considerable expense.

Development to Be Slow

Likewise, the topography is very rough between Craig, the center of the probable oil section of northwestern Colorado, and the Denver & Rio Grande Railroad, which traverses the country less than 70 miles south from Moffat Pool. It is therefore, questionable whether either of these roads will construct a line to Craig in the near future. With the isolated district, then, being solely dependent upon the Moffat Road and with refining and marketing centers many miles away, together with the long length of time to drill and complete deep wells, as factors, it can readily be seen that there is little likelihood of northwestern Colorado upsetting the oil market this year or next, even though a number of structures develop production simultaneously.

The opinion is expressed that there is no prospect of the extension of pipe line systems to such extent as would bring on the market from this source a surplus of oil.

LOG OF TEXAS PRODUCTION CO.-TRANSCONTINENTAL OIL CO'S KNOWLTON NO. 1 MOFFAT COUNTY, COLORADO

Commenced Drilling June 21, 1923; Completed Drilling February 29, 1924.

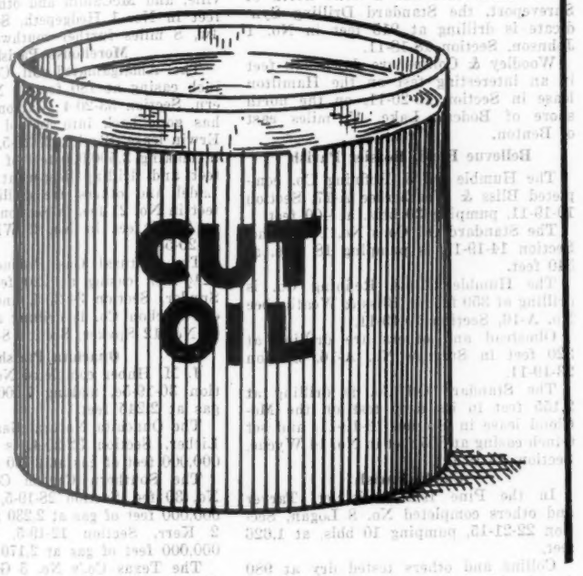
Formation—	Depth	Remarks
Soil	0- 15	
Dark blue shale	15- 68	
Gravel, 2 bailers water per hour	68- 89	
Dark blue shale	89- 190	
Sandy shale, very slight show dead oil	190- 192	
Dark blue shale	192- 240	
Sandy shale, show dead oil	240- 242	
Dark shale	242- 275	
Hard, dark blue shale	277- 616	
Sandy shale, enough water to drill but exhausted when 12¼-in. set at 1,500	616- 626	
Dark blue shale	626- 650	
Sandy shale, dark blue	650- 700	
Dark blue shale	700- 880	
Brown shale	880-1,480	
Hard gray shale	1,480-1,555	
Sandy blue shale	1,555-1,825	
Dark blue shale, some fish scales	1,825-1,845	
Dark blue shale and limey shells	1,845-2,035	
Blue shale, no sand	2,035-2,037	Oil
Dark blue shale	2,037-2,135	
Dark blue shale	2,135-2,145	Oil
Dark blue shale	2,145-2,360	
Lime, shells	2,360-2,364	10-in. set at 2,364 ft.
Lime shells	2,364-2,365	
Dark blue shale	2,365-2,535	
Dark blue shale, possibly 1 bbl. oil	2,535-2,540	
Dark blue shale	2,540-2,580	
Dark blue shale, possibly 1 bbl. oil	2,580-2,610	Dead oil
Dark blue shale, lots of calcite	2,610-2,630	
Dark blue shale, little calcite	2,630-2,700	
Dark blue shale	2,700-2,960	
Shale and lime shells	2,960-2,965	
Dark blue shale	2,965-3,070	5 bbls. water, 24 hrs., 2,955 ft.
Bentonite	3,070-3,080	
Dark blue shale, little calcite	3,080-3,125	
Calcareous shale or sandy lime	3,125-3,150	
Blue lime	3,150-3,156	8-in. set here
Dark blue shale, temperature 104 degrees	3,156-3,215	
Dark blue shale	3,215-3,240	
Limy shale	3,240-3,415	
Hard lime, enough gas to fire stove only	3,415-3,420	
Sandy lime, 1,500 ft. water	3,420-3,425	
Fine sharp gray sand, 3,000 ft. water	3,425-3,455	
Fine grayish white hard sand	3,455-3,480	
Light blue shale	3,480-3,495	
Dark blue shale	3,495-3,512	
Bentonite, solid, possibly called plastic white shale	3,512-3,530	
Dark blue shale	3,530-3,550	
Dark blue shale and occasional lime shell	3,550-3,783	26 strokes a min. in dry hole
Show of oil and gas at 3,740 ft.		
Dark blue shale and Bentonite	3,783-3,797	
Black lime	3,797-3,800	
Brown soft open oil sand, flow of oil	3,800-3,805	

Top of Niobrara at 1,825 feet. At this depth lime content increased approximately 10 times. Hypsodon andax scales were present in cuttings. Hole could be bailed dry of shale oil at 2,035 feet. Highest production by bailer, 41 bbls. in 24 hours. Showing was bailed for three weeks. Last day test, hole was allowed to fill up and showed 5 bbls. in 19 hours.

At 2,145 feet shale oil was swabbed for seven days, first day 125 bbls. and sixth day 81 bbls. As available tankage was full, testing stopped.

Drilled one foot into sand at 3,800 feet on January 15, 1924, with initial flow of about 1,000 bbls. of 43 gravity oil. After erection of 10,000-bbl. tankage, well was drilled to a total depth of 20 feet into sand, which was completed February 29, 1924. On March 2 and 3 the well was allowed to run natural for 37 hours, producing 5,158 bbls., or an average of 4,589 bbls. for 24 hours. All storage filled and well shut in indefinitely.

From This To This



At Nominal Cost

The Most Economical Treating Process

Fresh cut oil is completely separated into pipe line oil and water, by the TRET-O-LITE Process. Cost rarely exceeds a few cents per barrel of recovered oil, regardless of the character of the emulsion treated.

"B. S." and Tank Bottoms are also treated by TRET-O-LITE with complete success, every particle of the oil being recovered.

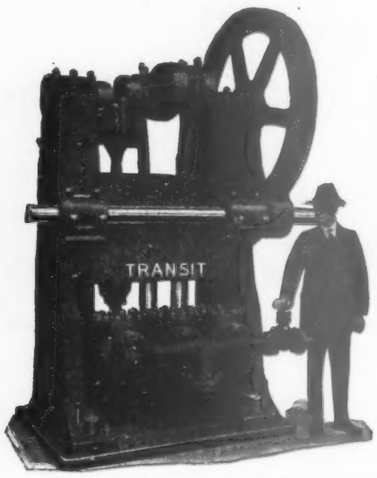
Many producers have told us that they figure treating with TRET-O-LITE costs them "NOTHING." They mean by this that treating processes formerly used left a "B. S." residue, while TRET-O-LITE leaves no "B. S.," and thus recovers enough **additional** oil to pay the total treating expense.

TRET-O-LITE represents a scientifically correct method of treating petroleum emulsions. It is the only method which directly attacks the **cause** of the emulsion,—namely, the emulsifying agent present. The treatment is simple in the extreme. TRET-O-LITE is simply mixed into the emulsion, under suitable conditions. It attacks and neutralizes or destroys the emulsifying agents. Oil and water then separate completely and normally, by gravity.

The process is rapid, thorough, simple, and conducted without special equipment. Installation cost is hardly more than nominal. Write us if you are interested, and your inquiry will be promptly referred to our local field expert who will get in touch with you. Address Wm. S. Barnickel & Company, Webster Groves, St. Louis County, Mo.

Each P. A. Was O. K.

"What!" said the Purchasing agent, "you don't mean to tell me you are offering that vertical triplex as a Pipe Line Pump do you?"



6x18" Vertical Triplex Power Pump. 8000 barrels in 24 hours against 900 pounds line pressure. Floor space required 7 feet 7 inches, by 7 feet. 8-inch suction and 6-inch discharge.

"Don't waste your time showing me anything else than vertical triplexes," said another Purchasing Agent for one of the largest pipe lines in this country.

"Of course not," said we.

"We have found that Vertical Triplexes will do our work best and cheapest," continued the P. A.

We were able to satisfy both men—because we make both kinds of power pumps—Horizontal and Vertical

Much depends on your conditions. We will be glad to go over them with you.

NATIONAL TRANSIT
PUMP & MACHINE CO.
Oil City, Pa.

District Offices: New York Philadelphia Pittsburgh Cleveland Tulsa Houston Denver

N. LOUISIANA-ARKANSAS

(Continued from Page 46)

tion 22-21-10, and the Woodley Petroleum Co. set 8-inch at 1,170 feet in No. 1 Merritt, and is drilling at 2,350 feet in No. 2, Section 13-21-10.

Bossier Parish

Interest in Bossier Parish is centered on the Bodcau Lumber Co. well, drilled by Estes and others in Section 15-23-12, in which there was a slight showing of oil at 2,721 feet. The well is in the north end of the parish, 8 miles northeast of Plain Dealing district.

Skannal and others are drilling in sand at 2,435 feet in their test on the Smith lease in Section 24-17-12, 5 miles southeast of Shreveport.

Ten miles east and a little north of Shreveport, the Standard Drilling Syndicate is drilling at 915 feet in No. 1 Johnson, Section 18-18-11.

Woodley & Collins are down 710 feet in an interesting test on the Hamilton lease in Section 16-20-11, on the north shore of Bodcau Lake, 15 miles east of Benton.

Bellevue Field, Bossier Parish

The Humble Oil & Refining Co. completed Bliss & Weatherbee A-17, Section 10-19-11, pumping 30 bbls. at 400 feet.

The Standard Oil Co.'s No. 17 Wyche, Section 14-19-11, is pumping 18 bbls. at 340 feet.

The Humble Oil & Refining Co. is drilling at 350 feet in Bliss & Weatherbee No. A-16, Section 10-19-11.

Olmstead and others are drilling at 320 feet in Strange No. A-16, Section 23-19-11.

The Standard Oil Co. is drilling at 2,155 feet in its deep test on the McCloud lease in Section 13-19-11, and set 6-inch casing at 305 feet in No. 14 Wyche, Section 14-19-11.

Caddo Parish

In the Pine Island district, Tarver and others completed No. 8 Logan, Section 22-21-15, pumping 10 bbls. at 1,626 feet.

Collins and others tested dry at 980 feet in No. 1 Levy Realty & Planting Co., Section 23-19-14, arranging to drill deeper. The test is 8 miles south of Shreveport, about half way between the Elm Grove and Bethany gas fields.

In the Pine Island district, the Dixie Oil Co. is arranging to pump No. 2 Hanzen, Section 23-21-15, and has derrick up for No. 61 Robertshaw, Section 13-21-15; Mutual Oil Co. bailing to test at 1,618 feet in No. 10 Raines, Section 22-21-15, and Tarver & Bashara drilling at 700 feet in No. 1 Crye Lane, Section 22-21-15.

In the Rodessa district in the north end of the parish, the Louisiana Texas Community Oil Co. set 6-inch casing at 2,717 feet in No. 1 Rodessa, Section 15-23-16.

In the Oil City district, the Reynolds Oil & Gas Co. is drilling at 1,800 feet in No. 4 on the Jeems Bayou Hunting & Fishing Club property, Section 9-20-16.

Claiborne Parish

The Dixie Oil Co. is drilling in rock at 925 feet in No. 1 Eastep, Section 20-20-7.

The El Dorado Chief Oil Co. is drilling at 2,750 feet in No. 1 Gandy, Section 36-22-7.

The Forest Oil Co. is drilling in gumbo at 1,700 feet in No. 1 Fields, Section 22-19-5.

The Standard Oil Co. is drilling in rock at 2,095 feet in No. 1 Loyd, Section 10-20-5.

The Triangle Drilling Co. is running core barrel at 2,010 feet in No. 1 Ferguson, Section 5-21-5.

The White Oil Corp. is drilling in shale at 1,705 feet in No. 18 Oakes, Section 30-21-7.

Woodley & Collins are drilling at 2,665 feet in No. 1 Reynolds, Section 30-21-4.

De Soto Parish

Ulrey and others are running core barrel at 2,760 feet in No. 1 Frost Johnson, Section 3-11-15, 66 miles east of Logansport. A slight showing of oil has renewed interest in the old Logansport territory and A. H. Tarver is rigging up to drill No. 3 Matthews, Section 32-12-16, a mile northwest of Logansport.

Caldwell Parish

Culver and others are running core barrel at 2,205 feet in No. 1 fee, Section 21-14-4, 5 miles north of Columbus.

LaSalle Parish

The Bur Ban Oil Co. is down 300 feet in No. 2 Uranis, Section 21-11-2e, 5 miles north of Urania.

The Stovall Drilling Co. is drilling at 1,185 feet in its second test on the Louisiana Central Lumber Co. lease, Section 27-10-2e, 4 miles southeast of Urania.

Lincoln Parish

Buckner and others are drilling at 1,050 feet in No. 1 Barrett, Section 13-20-3w, 13 miles southwest of Farmerville, and McCaldin and others at 1,350 feet in No. 1 Hedgepeth, Section 28-20-4w, 8 miles further southwest.

Morehouse Parish

The Amalgamated Oil Co. set 12½-inch casing at 180 feet in No. 2 Southern, Section 33-20-4; Carson Carbon Co. has gone back into an old well on the Erwin lease, Section 20-20-5, which came in making 3,500,000 feet of gas at 2,245 feet and drilling deeper at 2,500 feet; Ladel and others are drilling at 2,180 feet in No. 21 fee, in Section 8-19-5e, and at 2,235 feet in No. 2 White, Section 30-20-5e.

The Natural Gas Producing Co. set 12½-inch casing at 220 feet in No. 4 Snyder, Section 34-20-5, and the Southern Carbon Co. is drilling at 1,925 feet in No. 12 Spyker, Section 8-20-5.

Ouachita Parish

J. M. Huber completed No. 6 fee, Section 30-19-5e, making 7,000,000 feet of gas at 2,245 feet.

The Ouachita Natural Gas Co.'s No. 3 Lieber, Section 32-20-4, is making 19,000,000 feet of gas at 2,130 feet.

The Southern Carbon Co. completed No. 30 fee, Section 28-19-5, making 14,000,000 feet of gas at 2,230 feet, and No. 2 Kerr, Section 12-19-5, making 30,000,000 feet of gas at 2,170 feet.

The Texas Co.'s No. 5 Gibbs, Section 20-19-5, is making 7,000,000 feet of gas at 2,260 feet.

The Atlas Oil Co. is setting liner to test at 4,095 feet in No. 2 West Virginia Timber Co., Section 3-18-5, the deepest test ever made in this territory.

The Central Carbon Co. is drilling at 2,000 feet in No. 2 Licber, Section 4-19-5, and the Cosmos Carbon Co. at 1,865 feet in No. 1 Fee, Section 6-19-5.

Ladel and others are drilling at 1,625 feet in No. 25 fee, Section 30-19-5; the Oil Field Exploration Co. set 12½-inch casing at 205 feet in No. 1 Collins, Section 18-19-5, and the Palmer Corp. is setting 6-inch casing at 2,175 feet in No. 1 Lieber, Section 4-19-5.

The Southern Carbon Co. has four rigs running on fee land in Sections 21 and 15-19-5, and derrick up for No. 35 fee, Section 5-19-5; Standard Carbon Co. set 8-inch casing at 990 feet in No. 1 Perry, Section 8-19-5, and 6-inch at 2,190 feet in No. 2 Vinson, Section 32-19-5.

The Texas Co. is rigging up to drill No. 1 Ladel, Section 2-19-5.

Red River Parish

La Grande and others had a slight showing of oil at 1,728 feet in No. 3 Fee, Section 2-14-12, and is arranging to drill deeper. The test is 10 miles northwest of the famous Gusher Bend district.

Union Parish

R. E. Allison set 10-inch casing at 120 feet in No. 1 Frost Johnson Lumber Co., Section 15-23-1w.

The Gulf Refining Co. is drilling in shale at 1,850 feet in No. 2 Security Trust, Section 24-23-1w.

J. F. Palmer is rigging up to drill No. 1 Templeton in Section 1-23-1e.

Arkansas Wildcats

Calhoun County: The Calhoun Oil & Gas Co. abandoned its test on the Hearnesberger lease, in Section 10-11-14, after drilling to a depth of 2,930 feet.

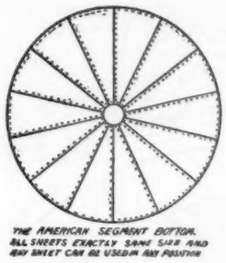
The Arkansas Fuel Co. is setting 15½-inch casing at 145 feet in No. 2 Childress, Section 1-15-15.

Clark County: The United Petroleum

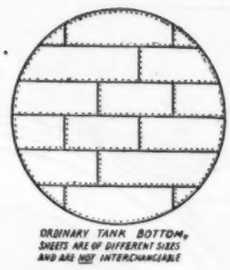
Let Your Answer Be Your Guide!

A Questionnaire for Bolted Tank Users

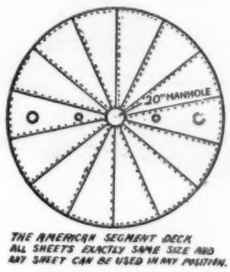
1. Which of the two bottoms at the right is more simple and practical?
2. Which is easier to erect?
3. In which can a sheet be replaced without cutting down the whole tank?
4. Which has greater strength due to its plan of construction?
5. Which of the two decks at the right is more simple and practical?
6. Which deck would you think has the greater pitch?
7. Which is easier to erect?
8. In which can a sheet be replaced most easily?
9. Which has the greater strength due to its plan of construction?
10. Look at the two tanks at the right and notice the difference in the construction of the side sheets.
11. Which is more practical and simple?



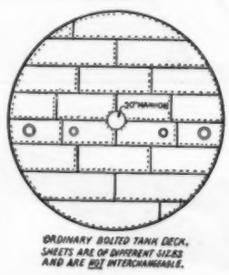
THE AMERICAN SEGMENT BOTTOM. ALL SHEETS EXACTLY SAME SIZE AND ANY SHEET CAN BE USED IN ANY POSITION



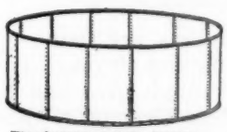
ORDINARY TANK BOTTOM, SHEETS ARE OF DIFFERENT SIZES AND ARE NOT INTERCHANGEABLE



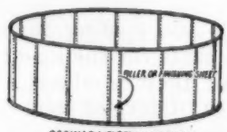
THE AMERICAN SEGMENT DECK ALL SHEETS EXACTLY SAME SIZE AND ANY SHEET CAN BE USED IN ANY POSITION.



ORDINARY BOLTED TANK DECK. SHEETS ARE OF DIFFERENT SIZES AND ARE NOT INTERCHANGEABLE.



THE AMERICAN SIDE SHEETS. ALL SHEETS EXACTLY SAME SIZE AND ANY SHEET CAN BE USED IN ANY POSITION. NO FILLER OR CLOSING SHEET.



ORDINARY SIDE SHEETS ARE NOT SPECIALLY CUT TO FIT TANK CIRCUMFERENCE, THUS A FILLER MUST BE USED.

12. Which of the above tanks is less liable to cause delay, through getting the wrong sheet for repairs?
13. Which would be easier for a workman, yardman, lease foreman or a superintendent to sort out after they had been cut down and piled in a yard?
14. May we quote you on your requirements of American Vapor Proof Segment Bolted Tanks now? How many? What size?

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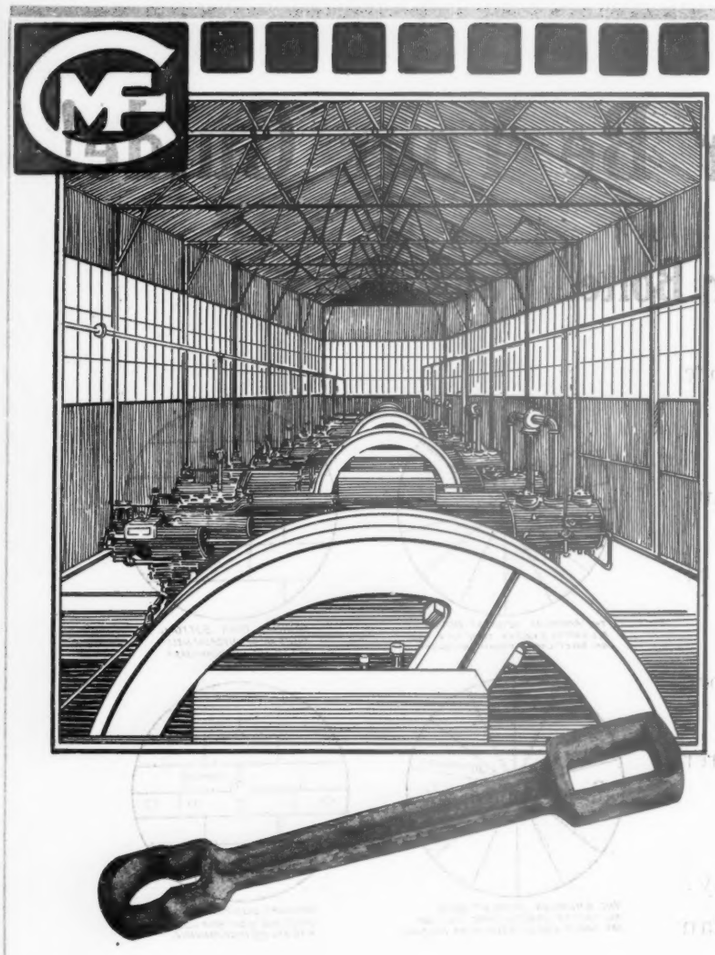

One by one leading manufacturers are using drop forged parts for the load bearing and strain resisting parts of their products. The tough give and take strength of forged steel offers no element of chance break downs, but affords reserve stamina for emergency loads and hard pulls.

Buy on the basis of performance and endurance and you'll buy at a profit. Champion Engineers help manufacturers of oil field equipment build more dependable products.

THE CHAMPION MACHINE & FORGING CO.
3695 East 78th Street **Cleveland, Ohio**

New York Office—30 Church St.
Philadelphia Office—Bourse Bldg.
Detroit Office—705 Ford Bldg.

CHAMPION DROP FORGINGS

Co. abandoned its test on the Langford land, in Section 28-5-23, at 2,256 feet.

Cleveland County: The Markle Syndicate is arranging to test 6 feet of sand at 2,265 feet in No. 1 Plumer, Section 22-9-10.

Columbia County: The Amerada Petroleum Corp. is running core barrel at 1,800 feet in No. 1 Baker-Joiner, Section 2-18-22, and the Arkoil Co. is down 2,380 feet in No. 1 Ray Fullenweider, Section 12-17-22.

The Atlantic Oil Producing Co. has set 6-inch casing at 2,025 feet in No. 5 Murphy, Section 14-15-20.

The Gulf Refining Co. is drilling at 1,410 feet in No. 2 W. Jones, Section 36-15-20.

The Magnolia Petroleum Co. has oil in 11 feet of broken sand at 2,100 feet and is arranging to pump.

Neibert and others are drilling in gumbo at 2,255 feet in No. 1 Barge, Section 22-18-22.

Dallas County: Conway and others drilled to 1,060 feet in No. 1 Matlock & Riggs, Section 33-6-15, and the test has been abandoned.

Stahl and others junked the hole in No. 1 Taylor, Section 5-10-16, and the test has been abandoned at 2,045 feet.

Drew County: The Monticello Ridge Oil Co. abandoned its test on the Graves lease, in Section 22-11-7, at 2,122 feet.

Graves and others are running core barrel at 2,082 feet in No. 1 Karnes, Section 10-13-6, and Ratcliff and others are drilling at 1,525 feet in No. 1 Spencer, Section 21-14-7.

Hempstead County: G. W. Simmons, trustee, is fishing for bailer at 2,700 feet in No. 1 Adams, Section 36-12-27.

Hot Springs County: The Smith Refining Co. is drilling in hard rock at 450 feet in No. 1 Kilpatrick, Section 10-6-18.

NORTH CENTRAL TEXAS

(Continued from Page 42)

with hole full of water at 3,865 feet; Little and others' No. 2 Drake, drilling up iron at 3,650 feet; Magnolia Petroleum Co.'s No. 9 Brown, fishing for tools at 3,123 feet; No. 2 Brown, fishing for tools at 3,123 feet; No. 2 Brown, drilling at 3,380 feet; No. 5 Brown, drilling in lime at 3,620 feet; No. 6 Brown, fishing for 5-inch casing at 3,510 feet; Montreal Oil Co.'s No. 4 Henderson, drilling at 3,200 feet; Pitzer and others' No. 1 Stoker, swedging casing at 3,850 feet; Prairie Oil & Gas Co.'s No. 1 Stoker, drilling with hole full of water at 3,540 feet; Root and others' No. 8-C Veale, drilling at 3,700 feet; Scott and others' No. 1 Davis, showing 1,000,000 feet of gas at 3,030 feet; Sinclair Oil & Gas Co.'s No. 9 Henderson, running 10-inch casing at 1,505 feet; Snowden & McSweeney's No. 1 Jones, drilling in shale at 3,420 feet; No. 11 Jones, drilling at 1,160 feet; States Oil Corp.'s No. The Texas Co.'s No. 8 Heathley, drilling at 425 feet; No. 9 Keithley, showing 3,000,000 feet of gas from gray lime and drilling at 3,050 feet; No. 10 Keithley, drilling at 550 feet; No. 39-A Parks, 1,300 feet of oil in hole and drilling at 3,145 feet; Welch and others' No. 1 Saunders, pulling 8-inch casing and on top of sand at 2,167 feet; Walker and others' No. 1 Newman, spudding.

Eastland County

Completions: Humble Oil & Refining Co.'s No. 2 Sneed, 80 bbls. at 885 feet; McLester and others' No. 1 Hunt, dry at 1,400 feet; Panhandle Oil & Refining Co.'s No. 19 Hightower, 30 bbls. at 1,210 feet; Republic Oil Co.'s No. 1 Sneed, 20 bbls. at 1,225 feet; Teatsorth and others' No. 1 Scott, 5 bbls. at 1,500 feet; Clayton and others' No. 1 Ams, 11,000,000 feet of gas at 3,225 feet.

Drilling: Dixie Oil Co.'s No. 1 Waggoner, top of sand and showing oil and drilling at 3,332 feet; Allison and others' No. 1 Fox, drilling at 1,000 feet; El Dorado Oil Co.'s No. 1 Hague, spudding; Flaherty and others' No. 1 Ross, drilling in rock at 2,100 feet; Kirk and Brewer's No. 1 Young, straightening hole at 2,100 feet; Knox and Lewis' No. 1 Simmons, drilling at 1,000 feet; Magnolia Petroleum Co.'s No. 3 Edison, drilling at 2,000 feet; No. 16 Westmoreland, fishing job at 2,830 feet; McLester and others' No. 2 Hunt, spudding; Mid-Kansas Oil & Gas Co.'s No. 6 Harrell, drilling in soft rock at 1,940 feet; Mook and others' No. 1 Casey, drilling at 2,500 feet; Parsons and others' No. 1 Ainsworth, underreaming at 1,233 feet; Pardee and others' No. 1 Hague, drilling at 1,010 feet; Root and others' No. 1 Lyerla, drilling in shale at 900 feet; Williamson and others' No. 2 Fox, spudding; Bobo and others' No. 1 Amis, drilling in soft rock at 1,900 feet; Burkett and others' No. 1 Hatton, drilling in gray lime without any showing at 3,405 feet; Colquett and others' No. 1 Downtain, in gray lime and testing at 3,390 feet; Continental Oil Co.'s No. 1 Sneed, drilling in shale at 2,200 feet; Daugherty and others' No. 1 Johnson, drilling in black lime without any oil showing at 3,780 feet; Donnelley Drilling Co.'s No. 1 Stubblefield, drilling at 2,300 feet; Lowe and others' No. 4 Harris, drilling at 1,980 feet; States Oil Corp.'s No. 4 Hise, drilling at 3,020 feet; The Texas Co.'s No. 1 Ramsey, drilling in soft rock at 380 feet; Turner and others' No. 3 Jones, drilling in shale at 1,905 feet.

Wildcats

Baylor County—Completions: Sunshine State Oil & Refining Co.'s No. 1 Wallace, dry at 2,000 feet.

Drilling: Batchelder and others' No. 1 Wallace, a derrick; Crittendon and others' No. 1 Coffee, drilling at 970 feet; Independent Oil Co.'s No. 1 Mills, drilling in soft rock at 1,280 feet; Moore and others' No. 1 Fancher, spudded and shut down; Staley and others' No. 1 Parker, drilling in lime at 1,290 feet.

Clay County—Drilling: Cumley and others' No. 1 Stine, standardizing at 1,780 feet; D'Yarmett and others' No. 1 Bullington, drilling in rock at 1,285 feet; Dixon and others' No. 1 Godfrey, drilling in shale at 760 feet; Gulf Production Co.'s No. 1-A Boddy, pulling casing to abandon at 3,860 feet; No. 3 Worsham, plugging to abandon at 3,860 feet; No. 4 Worsham, drilling at 540 feet; Nebraska Oil & Gas Co.'s No. 1 Myers, pumping sandy lime showing considerable oil with no gauge at 3,400 feet.

Foard County: Landreth Producing Co.'s No. 1 Halcell, fishing for casing at 2,200 feet.

Montague County—Drilling: Boyd Oil Co.'s No. 1 Salmon, drilling in shale at 855 feet; Gulf Production Co.'s No. 1 Benton, pulling casing to abandon at 3,910 feet.

Throckmorton County — Completions: Divine and others' No. 1 Richard, dry at 1,205 feet; Hale Tex Oil Co.'s No. 1 Lee, dry at 960 feet.

Drilling: Asheraft and others' No. 1 Polk land, drilling at 1,370 feet; Graves and others' No. 1 Reynolds, drilling in brown shale at 670 feet; Hale Tex Oil Co.'s No. 1 Elliott, drilling at 605 feet; King and others' No. 1 Broiles, drilling at 220 feet; Larkin and others' No. 1 Conger, drilling in shale at 805 feet; Maer and others' No. 1 Portwood, drilling in hard rock at 1,180 feet; Shamrock Oil Co.'s No. 1 McKnight, moving in tools; Whatley and others' No. 1 Todd, drilling at 265 feet; Young and others' No. 1 Reynolds, drilling in shale at 275 feet.

Carson County—Drilling: The Texas Co.'s No. 3 Burnett, drilling at 3,045 feet; No. 4 Burnett, drilling in red shale at 250 feet; No. 2 Mary Burnett, fishing for 10-inch casing at 2,075 feet; American Refining Co.'s No. 1 Burnett, fishing for bit at 2,780 feet; No. 2 Burnett, drilling in lime at 2,300 feet; Culberson and others No. 1 Armstrong, small show of oil at 1,117 feet, drilling in red shale at 1,510 feet; Gulf Production Co.'s No. 4-A Burnett, drilling in quick sand at 160 feet; Greenwood and others' No. 1 Burnett, trying to get 15½-inch casing loose at 1,500 feet.

Childress County—Drilling: Anderson and others' No. 1 Givens, drilling at 2,965 feet.

Cottle County—Drilling: Woodley and

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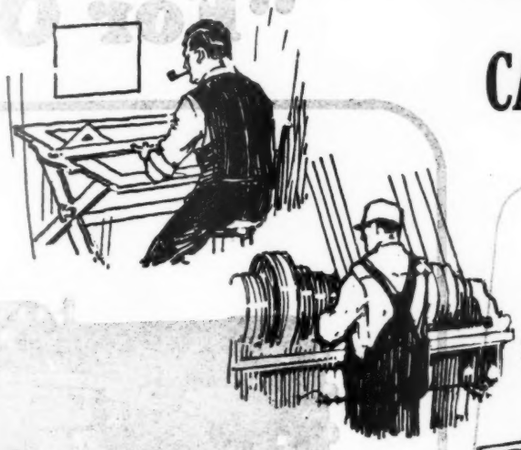

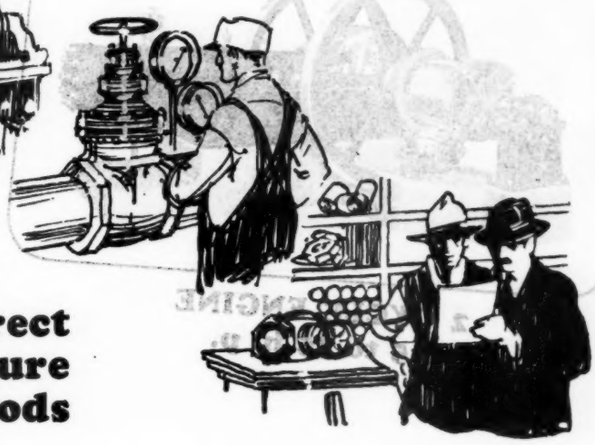

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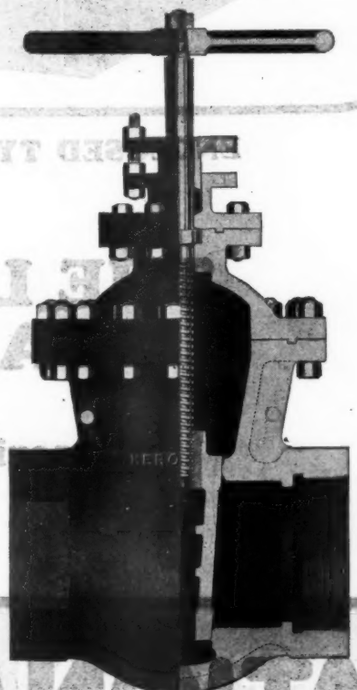

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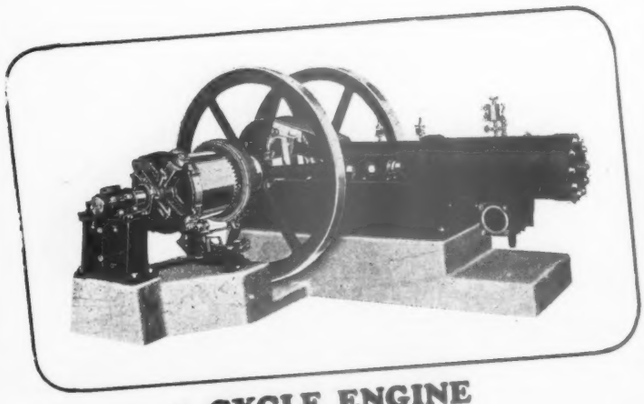

2 CYCLE ENGINE
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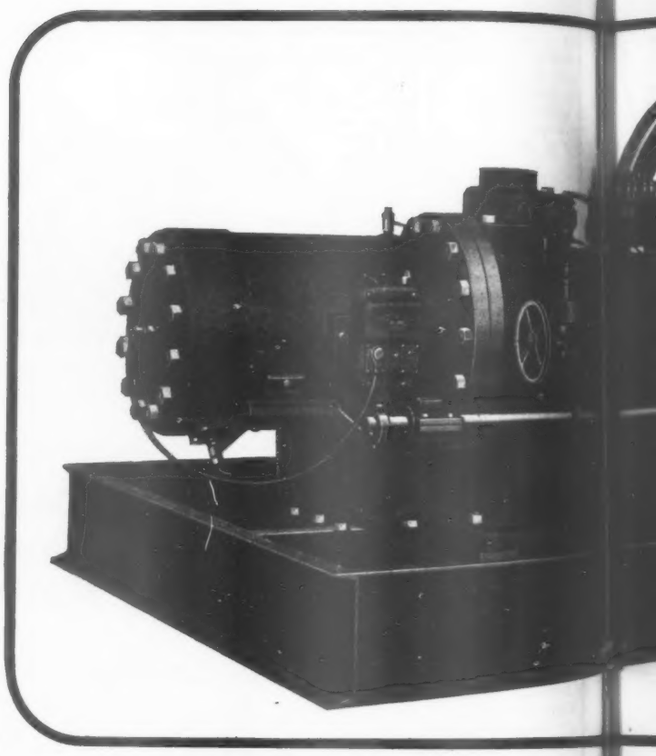

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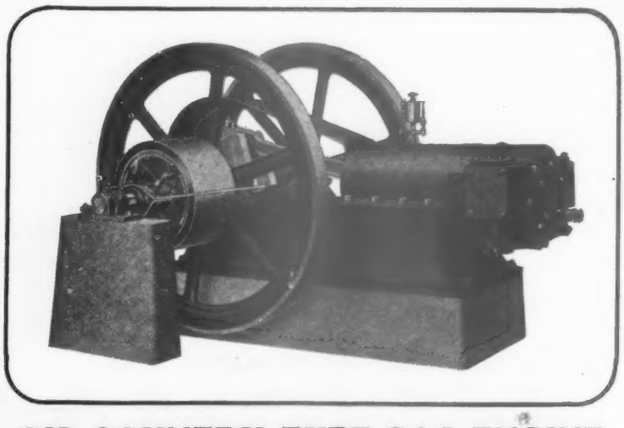

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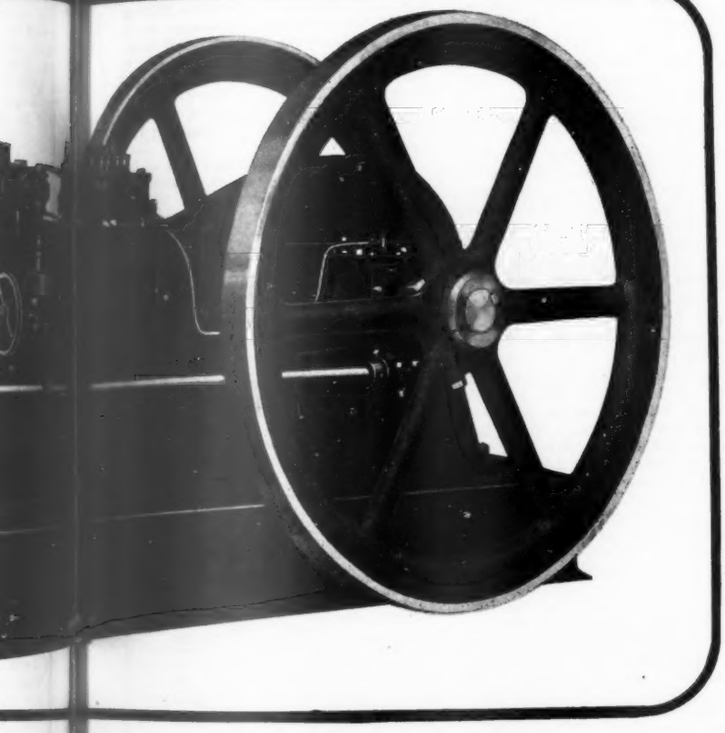

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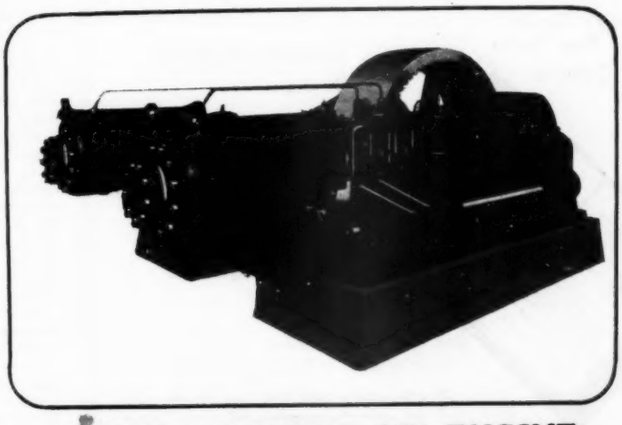

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others' No. 1 Dulaney, straightreaming at 1,600 feet.

Garza County—Drilling: Blackwell and others' No. 1 Boren, drilling in salt and shells at 1,050 feet.

Gray County—Drilling: Texas Co.'s No. 1 Saunders, repairing boiler at 2,780 feet; Holmes and others' No. 1 Morris, underreaming for 6-inch casing in red shale at 2,910 feet; Wilcox Oil Co.'s No. 1 Combs, rigging up cable tools at 2,805 feet.

Hutchinson County—Drilling: Barnum and others' No. 1 Johnson, drilling in lime at 2,785 feet; Gulf Production Co.'s No. 1 Cockrell, a rig; No. 1 Whittenburg, spudding; Plains Oil Co.'s No. 1 Weatherly, cleaning out with 1,000 feet of fluid in the hole at 3,270 feet; Watchorn Oil Co.'s No. 1-A Cable, pulling pipe to abandon at 3,500 feet; Wilson and others' No. 1 Whittenburg, showing 20,000,000 feet of gas and drilling in lime at 2,375 feet.

Moore County—Drilling: Producers and Refiners Oil Co.'s No. 1 Masterson, straightening hole at 1,940 feet.

Potter County—Drilling: Producers & Refiners Oil Co.'s No. 1-A Bivens, drilling by 600 feet of 6⅝-inch casing at 3,262 feet; No. 2-A Bivens, fishing for a bit at 2,562 feet.

Wheeler County—Drilling: Shedden and others' No. 1 Westmoreland, drilling in rock at 390 feet; Tyrell and others' No. 1 Sheldon, drilling at 2,060 feet; Union Petroleum Co.'s No. 1 Nicholson, drilling in rock at 265 feet; Whittington and others' No. 1 Wilson, fishing for 8-inch collapsed casing at 2,058 feet.

Erath County—Completions: Paschall and others' No. 2 Laney, dry at 2,645 feet; Marshall and others' No. 1 Martin, dry at 3,240 feet.

Callahan County—Completions: Moore and others' No. 6 Ackers, dry at 2,550 feet; Poe & Wilson and others' No. 2 Anderson, dry at 2,550 feet; No. 3 Bryson, dry at 2,500 feet; Schaffner and others' No. 2 Jones, dry at 2,550 feet.

Drilling: Dutton and others' No. 4 Cathey, drilling in shale at 670 feet; Kellogg and others' No. 1 Snyder, spudding; McCree and others' No. 1 Isenhower, drilling at 1,680 feet; Root and others' No. 1 Kile, drilling at 160 feet; Seaboard Oil & Gas Co.'s No. 3-B Isenhower, drilling in soft rock at 1,160 feet; No. 4-B Isenhower, drilling at 1,470 feet; Sherrin and others' No. 3 Cathey, drilling at 470 feet; Tidal Oil Co.'s No. 3 Cathey, drilling at 730 feet; No. 4 Cathey, spudding.

Mitchell County—Completions: Sloan and others' No. 4 Smart, 150 bbls. at 3,000 feet.

Drilling—Sloan and others' No. 5 Smart, cleaning out after shot at 3,050 feet; California Co.'s No. 1 Morrison, drilling at 4,892 feet; No. 1 Butler, swabbing and bailing oil at 3,275 feet; No. 1 Miller, drilling at 2,105 feet; No. 8 Morrison, drilling in shale at 1,100 feet; No. 9 Morrison, drilling at 200 feet; Tidal Oil Co.'s No. 1 Hanley, drilling at 1,760 feet.

Howard County—Completions: Big Springs Oil Co.'s No. 1 Quinn, dry at 3,640 feet.

Brown County—Completions: Cullinan and others' No. 1 Pickett, 30 bbls. at 1,295 feet; Infield Petroleum Co.'s No. 5 Windham, 25 bbls. at 2,410 feet.

Drilling: Brownwood Petroleum Co.'s No. 9 Williams, cleaning out at 2,486 feet; Canyon Oil & Gas Co.'s No. 2 Newton, drilling in shale at 1,280 feet; Maher Brothers' No. 1 Bohara, showing oil and drilling at 2,255 feet; Mahlstedt & Mook Oil Co.'s No. 1 Newlin, showing oil and gas and drilling at 1,250 feet; Mendenhall and others' No. 1 Newton, drilling at 425 feet.

Reagan County—Completions: Big Lake Oil Co.'s No. 8 University, 125 bbls. at 3,070 feet.

Drilling: Big Lake Oil Co.'s No. 9 University, setting 6⅝-inch casing at 2,980 feet; No. 10 University, standardizing at 2,950 feet; No. 11 University, drilling at 1,850 feet; Dunning and others' No. 1 Sawyer, sidetracking tools at 1,760 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Macintosh, drilling in rock at 3,170 feet; Texas Pacific Coal & Oil Co.'s No. 1 Walters, drilling in blue shale at 3,170 feet; Texon Oil and Land Co.'s No. 1 University, fishing for three strings of tools at 1,300 feet.

Comanche County—Drilling: Kirk & Brewer's No. 1 Sloan, drilling at 1,900 feet; Spratt and others' No. 1 Martin, drilling at 800 feet; Poe & Wilson's No. 1 Johnson, spudding.

Shackelford County—Drilling: Humble Oil & Refining Co.'s No. 1 Miles, drilling at 1,805 feet; Kellogg and others' No. 1 Sedwick, drilling at 1,600 feet; Landreth Oil Co.'s No. 1 Jackson, drilling at 1,620 feet; Miller and others' No. 2 Boyett, drilling in blue shale at 2,100 feet.

Palo Pinto County—Drilling: Cunningham and others' No. 1 Holly, drilling in soft rock at 640 feet; McKenney and others' No. 1 Marsden, drilling at 310 feet; Singleton and others' No. 1 Holt, probably will abandon at 4,360 feet; Tabbart and others' No. 1 Thornton, drilling at 415 feet; Moore and Snebold's No. 2 Boles, cleaning out after shot and showing gas at 3,418 feet; Pat Dalton's No. 1 Dalton, drilling at 860 feet; Republic Production Co.'s No. 1 fee, drilling at 450 feet; Texas Pacific Coal & Oil Co.'s No. 11 Robinson, drilling in shale at 1,470 feet.

Production Report
Week Ending June 19, 1924

Burkburnett

American Refining Co.	
Barkley & Meadows	1,460
Humble Oil & Refining Co.	670
Gulf Production Co.	1,130
Magnolia Petroleum Co.	3,345
McMahon Oil Co.	465
Panhandle Oil & Refining Co.	445
Prairie Oil & Gas Co.	10
Sinclair Oil & Gas Co.	85
The Texas Co.	615
Texhoma Oil & Refining Co.	485
Miscellaneous	10,280
Total	19,180

Electra

Empire Gas & Fuel Co.	1,290
Humble Oil & Refining Co.	370
Griswold Oil Co.	285
Gulf Production Co.	910
Magnolia Petroleum Co.	4,370
McMahon Oil Co.	200
Panhandle Oil & Refining Co.	155
The Texas Co.	4,420
Texhoma Oil & Refining Co.	1,825
Miscellaneous	7,105
Total	20,940

Iowa Park, Etc.

American Refining Co.	30
Griswold Oil Co.	25
Gulf Production Co.	85
Panhandle Oil & Refining Co.	305
Texhoma Oil & Refining Co.	90
Miscellaneous	3,760

Archer County

Empire Gas & Fuel Co.	1,695
Griswold Oil Co.	1,125
Gulf Production Co.	400
Humble Oil & Refining Co.	80
Panhandle Oil & Refining Co.	20
Prairie Oil & Gas Co.	2,670
The Texas Co.	1,060
Texhoma Oil & Refining Co.	3,285
Miscellaneous	24,925

Petrolia

Gulf Production Co.	45
Magnolia Petroleum Co.	25
The Texas Co.	80
Miscellaneous	120
Total	39,805

Stephens County

Empire Gas & Fuel Co.	125
Gulf Production Co.	1,545
Humble Oil & Refining Co.	1,425
Magnolia Petroleum Co.	985
Mid-Kansas Oil & Gas Co.	2,140
Prairie Oil & Gas Co.	790
Sinclair Oil Co.	165
The Sun Oil Co.	450
The Texas Co.	3,240
Texas Pacific Coal & Oil Co.	1,745
Miscellaneous	9,700
Total	21,330

Eastland County

Gulf Production Co.	485
Humble Oil & Refining Co.	165
Magnolia Petroleum Co.	550
Panhandle Oil & Refining Co.	765
Prairie Oil & Gas Co.	710
Sinclair Oil & Gas Co.	565
The Texas Co.	400
Texas Pacific Coal & Oil Co.	925
Miscellaneous	3,125
Total	7,695

Other Fields

Strawn—	
Texas Pacific Coal & Oil Co.	385
Miscellaneous	435
Mayer—	
Empire Gas & Fuel Co.	100
Humble Oil & Refining Co.	460
The Texas Co.	160
Texhoma Oil & Refining Co.	205
Miscellaneous	2,375
Coleman County—	
Miscellaneous	145
Brown County—	
Miscellaneous	540
Comanche-Eastland—	
Humble Oil & Refining Co.	220
Magnolia Petroleum Co.	1,065
Prairie Oil & Gas Co.	200
Sinclair Oil & Gas Co.	45
The Texas Co.	270
Texas Pacific Coal & Oil Co.	180

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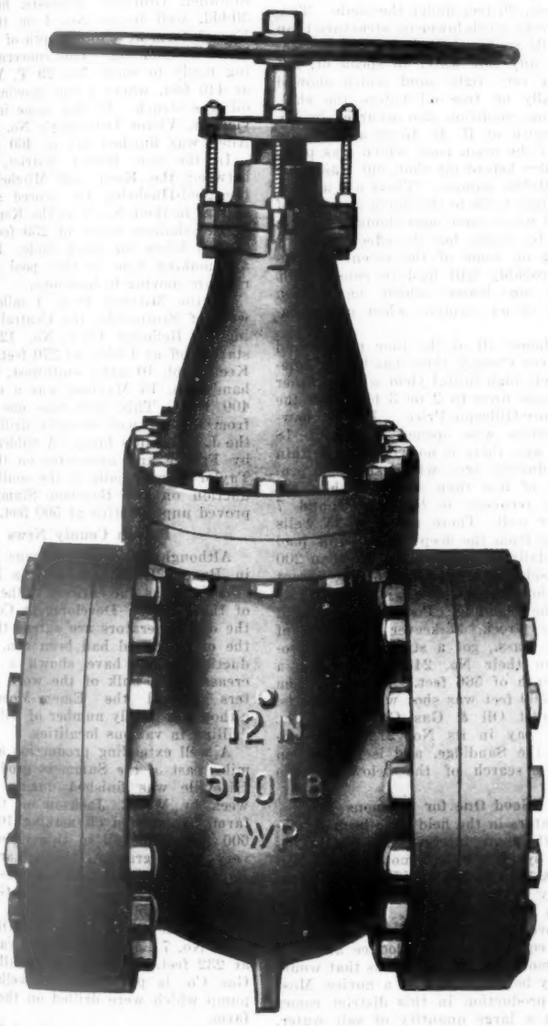

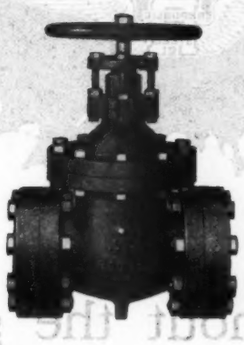

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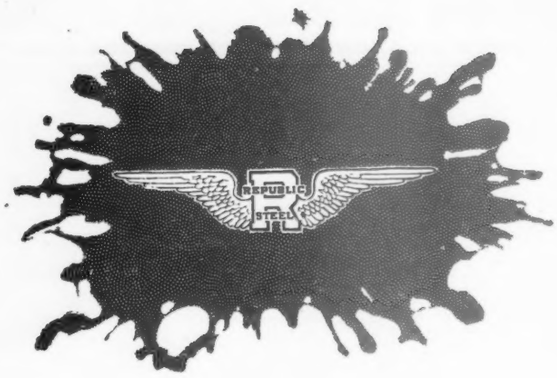

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		Birmingham

Miscellaneous	6,090	
Young County—		
Gulf Production Co.	100	
Sinclair Oil & Gas Co.	515	
Panhandle Oil & Refining Co.	310	
The Texas Co.	65	
Miscellaneous	3,585	
Mitchell County	1,350	
Reagan County	30	
Scurry County	15	
Carson County	820	
Hutchinson County	35	
Total		20,250
Total this week		129,070
Total last week		128,160
Gain		910

W. KENTUCKY-TENNESSEE

(Continued from Page 50)

shot with 10 and 50 quarts, respectively. On the H. V. Smith lease, Wiles and the Essex Petroleum Co.'s No. 5, west of No. 2 Adams, is a 30-bbl. starter at 1,265 feet, approximately 60 feet below the shale.

This pool was extended a half mile to the southwest by the completion of No. 1 McFadden by B. B. Rice and O. J. Daugherty, good for a 3-bbl. pumper after a 120-quart shot at from 1,229 to 1,247 feet, 90 feet under the shale. This well is very much lower on structure than any wells so far drilled and did not encounter any salt water to speak of, but found a very tight sand which showed practically no free oil before the shot. This same condition also occurred in No. 1 G. Smith of R. B. Rehn and others, north of the main pool, which was practically dry before the shot, but was made into a 10-bbl. pumper. There are a number of light wells to the north and east of the pool which have been thought to have defined its limits, but the effect of heavy shooting on some of the recent completions probably will lead to considerable activity on leases which have been thought of no account, when prices improve.

In almost all of the lime pays found in Warren County, there has been a comparatively high initial yield with a rather precipitous drop to 2 or 3 bbls. In the McLemore-Gillespie-Price Pool, however, which was opened up about 18 months ago, there is no well lying within the productive area which shows a production of less than 4 bbls., while the average recovery is between 6 and 7 bbls per well. There are now 35 wells pumping from the deep sand in this pool with a daily production of more than 200 bbls., aside from the flush of the recent completions noted above.

In the Sandidge Pool, northwest of Bowling Green, Makeever Brothers, of Boston, Mass., got a strong 35-bbl. producer in their No. 24 Sandidge, at a total depth of 566 feet. The sand from 535 to 560 feet was shot with 60 quarts. The Cadet Oil & Gas Co. missed the shallow pay in its No. 21 Biddle, adjoining the Sandidge, and is drilling on down in search of the below-the-shale sand.

Good One for Simmons

Operators in the field have been watching with great interest the results obtained by W. P. Simmons, of E. M. Treat & Co., on his big B. F. Summers property in the Pugh district, of northwestern Simpson County. Mr. Simmons has proved that a real oil operator, using proper equipment, can produce an enormous amount of oil from wells that would probably be abandoned by a novice. Most of the production in this district comes in with a large quantity of salt water, and Mr. Simmons has shown that by installing machinery capable of handling this fluid in quantity, without constantly breaking down, that a very large amount of oil can be recovered. He showed this first in his No. 10 well, which has to date produced over 6,000 bbls. of oil, and is still a good pumper. His No. 11, drilled some time ago, is still showing around 175 bbls. per day on steady pumping, while No. 12, completed this past week, is making better than 100 bbls. at 485 feet.

The writer made a survey of this district last week, and was impressed with the great size of the structure exposed on this property. It appears there is an enormous pool of oil in this locality, with production on the Pugh, Thacker, Bland, Poteet and other well known farms lying around this lease on three sides.

Mr. Simmons equipped his No. 11 well on the Summers with 3-inch tubing and working barrel, and put up a regular western oil field pumping outfit, with a large band wheel and walking beam, running around 52 strokes to the minute. He has proved conclusively that the more fluid that is handled the more oil will be produced. It is the general belief that hundreds of thousands of barrels of oil could have been produced in the western Kentucky Field, if proper equipment had been installed for handling water in quantity.

Allen County

The past week in the Allen County Field showed six completions, three of which were producers, with an initial yield of 109 bbls. The cut in the market the first of the week has had no effect yet on drilling operations and during the week seven holes were started.

In the Gainesville Pool, north of Scottsville, the White Plains Oil & Gas Co., Snowden Brothers' interests, finished a 30-bbl. well in its No. 4 on the J. L. French farm at a total depth of 388 feet. No. 5 is spudding. This concern is making ready to shoot No. 29 T. Y. Oliver at 446 feet, where a fine showing of free oil was struck. In this same immediate vicinity, Victor DeCaigny's No. 25 S. T. Allen was finished dry at 460 feet.

In the new Kerley district, midway between the Keen and Mitchell Pools, the Neil-Huebring Co. scored a 75-bbl. starter in their No. 8 on the Kerley farm at the shallow depth of 259 feet, about 50 feet below the black shale. Six wells are making hole in this pool and two rigs are moving to locations.

In the Mitchell Pool, 4 miles southwest of Scottsville, the Central Producing & Refining Co.'s No. 12 Barbee started off at 4 bbls. at 270 feet. In the Keen Pool, 10 miles southwest, Cunningham's No. 13 Mayhew was a duster at 400 feet. This well was one location from the big well recently drilled in on the J. I. Shelton farm. A wildcat drilled by France and associates on the T. O. Taylor farm, 1 mile to the south of production on the Bourbon Stamps lease, proved unproductive at 500 feet.

Barren County News

Although the pipe line runs for May, in Barren County, showed a large decrease, it was due entirely to the inability of the Paragon Development Co. to run the oil. Operators are agreed that if all the oil produced had been run, the production would have shown a good increase. The bulk of the work still centers around the Emery-Moore Pool, although a goodly number of wildcats are drilling in various localities.

A well extending production about 2½ miles east of the Summers production at Hiseville was finished during the past week by W. R. Jackson on the Creek farm. It started off making 10 bbls. at 600 feet. The oil in this vicinity is of very high gravity, testing around 46 Baume. In this vicinity, James K. Barr and H. C. Amos, of Bowling Green, are drilling at 150 feet on the R. P. Summers. The South St. Paul Oil & Gas Co.'s No. 7 Larkin Summers was drilling at 232 feet. The Summer Valley Oil & Gas Co. is putting three wells on the pump which were drilled on the Vincent farm.

The Carter Oil Co.'s No. 2 Wininger, in the Emery-Moore Pool, is a strong 8-bbl. pumper at 552 feet, approximately 189 feet below the shale. The Houchins Leasehold's No. 6 Mayfield made 5 bbls. at 581 feet, after a 20 quart shot. This same concern's No. 5 Mansfield showed for 20 bbls. at 535 feet. Shale was from 146 to 194 feet.

Cumberland County Development

Two dry holes is the record for the week in the Cumberland County Field. E. M. Treat & Co.'s No. 5 Dickens, offset to No. 3, was abandoned at 536 feet. This hole will be drilled deeper in the near future. The Dickens lease is in the Bear Creek district and near the town of

(Continued on Page 76)

Drills 100 Ft. of 15½" Hole a Tower

"Never Saw Piece of Mud as Big as an Egg"

An Experience of Great Interest to Cable Tool Drillers - - Read it Below:

By S. F. Eshelman, First National Bank Bldg., Denver
(a Letter written by Mr. Eshelman to L. E. Nebergall, inventor of SPIRAL STEM)

"Dear Mr. Nebergall—As a friend of your SPIRAL STEM, I wish to tell you of my experience and success in drilling a well in Wyoming. This well is located on Section 3, Township 40, Range 79, West, and was drilled in the toughest drilling in the Salt Creek Wyoming field, and this particular well was located right in a fault, and on the edge of the escarpment, which almost stands on end. **This part of the field has more plugged holes than any place I ever saw in the oil country.**

"We started drilling this well in January, 1922, drilled 800 feet of 15½" hole and put in the 12" pipe. Everything went fine. I never saw a string of pipe go in better than this 12". When we were about 200 feet under the pipe, the bailer stopped in the pipe about 600 feet down from the top, or 200 feet from the bottom of the casing. We took hold of the casing and found it parted. This casing having been used before, and not being the best second-hand casing at that, I quite naturally blamed it on the casing and made the exchange after fishing the bottom section out. We got a new string of D. B. X. casing and put it in.

"After drilling 150 feet, the same thing happened again, only 100 feet farther down—that is, the casing again broke off.

"We fished it out again, filled up to 50 feet and got one of your SPIRAL STEMS, having never used them before and being, in fact, just a little prejudiced against them.

"We had not drilled 50 feet with the SPIRAL STEM until we left the old hole and were drilling pure shale.

"I used a 15" stem, took it easy and held up on it, but got to going harder and drilling more all the time until I had it doing about all I could get out of it, **and believe me, it will drill, if you let it.** I was never out of the second hole in the crank and ran full screws at all times, and in all kinds of mud, and that is going some in a 15½" hole. I have drilled as much as 100 feet of 15½" hole a tower and never saw a piece of mud as big as an egg.

"I believe it is almost impossible to get a bad hole, at least you will not get more than three to five feet at most in a crevice, for it will stop drilling, all of which did occur on this well, and is easily fixed up. Now I can certainly, and will be glad to recommend the SPIRAL STEM as we used it in this well down to the 8" hole."

It is unnecessary to add a single word to the above—the statements and the figures speak for themselves. If **you** wish to get the advantage of this big new advance in cable tool drilling, we invite you to ask for prices and details—or better still, why not try one and judge for yourself?

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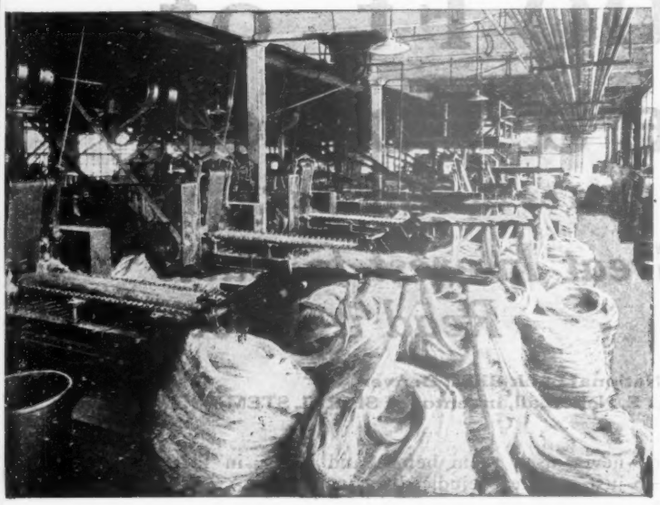
SPIRAL STEM

SPIRAL ROTARY DRILL COLLAR

110

"Drill With Manila"



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Talks on Manila Cordage

After manila fiber has been taken from the bales, it is "combed out" by machines that have revolving belts with steel teeth on them similar to a comb. The fiber is run through these combing machines several times until it is smoothly combed out into a uniform continuous length known as a "sliver."

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Stocks throughout the oil fields

EST. 1830 WALL CABLE TRADE MARK

Worthy of Trust

2

GULF COAST

(Continued from Page 48)

creek, is bailing at 4,400 feet. Gulf Co.'s No. 5 Wright, a workover, is a 25-bbl. pumper at 2,910 feet.

In the bay, Gulf Co.'s No. 3 Hirsch is drilling at 2,235 feet. No. 29 Beaumont is around 1,090 feet. The La Porte Oil & Refining Co.'s No. 5 Freeman in the water is drilling at 2,423 feet. On the mainland, the Gulf Co.'s No. 5 Rucker, 2 H. Galliard, 16 Galliard Fee and 18 Smith are all working over. No. 11 Briggs is at 2,640 feet.

Humble Oil & Refining Co.'s No. 3 Harrell is at 4,620 feet. No. 30 Schilling is working over. No. 25 Sweet is below 4,350 feet. No. 51 Galliard 25 acres is at 3,415 feet and No. 27 Peninsula is drilling at 4,235 feet. On the Smith tract on the east side of the pool, No. 47 is working over, No. 56 is at 1,875 feet and No. 58 is below 2,060 feet.

Inca Petroleum Co.'s No. 4 Duke is drilling at 700 feet. La Rue Oil Co.'s No. 5 Dannebaum is at 685 feet and Copeland Oil Co.'s No. 5 Bryan is around 3,180 feet. Gulf Coast Oil Co.'s No. 39 Galliard is drilling at 2,740 feet and Southern Exploration Co.'s No. 5 Wright is drilling at 2,090 feet. Blakely Oil Co.'s No. 7 Schilling is around 2,060 feet. Higspen Petroleum Co.'s No. 2 Busch, northwest of production, is drilling at 2,790 feet. Sun Oil Co.'s No. 4 Bartlett-Smith is working over at 2,385 feet.

At Pierce Junction, Gulf Production Co.'s No. 16 Taylor is drilling at 2,545 feet and Atlantic Oil Producing Co.'s No. 1 Camp is around 3,010 feet.

Brazoria County Pools

Humble Oil & Refining Co.'s No. 2 Smith on the northeast side of the dome at Damon Mound, is drilling around 4,185 feet in lime.

In West Columbia Pool, The Texas Co.'s No. 80 Hogg on the north side, blew out at 2,225 feet. The gas ignited and destroyed the derrick. Crew is now fishing for drill pipe stuck in hole. Humble Oil & Refining Co.'s No. 2 Smith on the northwest side, will make a pumper at 3,485 feet. Sun Oil Co.'s No. 5 Robertson is a salt water hole after working over at 3,210 feet.

Texas Co.'s No. 81 Hogg is drilling at 1,435 feet and No. 11 Abrams is fishing at 1,245 feet. Gulf Production Co.'s No. 3 H. Masterson is drilling at 2,840 feet. A derrick is up for the company's No. 6 Tom Hogg. Humble Oil & Refining Co.'s No. 2 Badge is drilling at 3,817 feet and No. 9 Tyndale-Wyoming is at 532 feet. Sun Oil Co.'s No. 3 Robertson is working over.

Liberty County Pools

In Hull Pool, Gulf Production Co. bailed No. 33 Phoenix dry at 3,250 feet. No. 40 Phoenix is making 100 bbls. at 3,425 feet and No. 42 bailing at 2,950 feet. The best well of the week in the pool was Gulf Co.'s No. 6-A Harrison on the west side, flowing 350 bbls. by heads at 3,025 feet. No. 8 Harrison is bailing at 2,050 feet. Humble Oil & Refining Co. abandoned No. 5 Marshall as dry at 865 feet and is bailing No. 11 Hankmer at 1,600 feet. Monarch Oil & Refining Co.'s No. 1 Abel will make a pumper at 2,600 feet, after being worked over. No. 8 Abel is a 75-bbl. pumper at 2,790 feet. Yount-Lee Co.'s No. 9 Merchant is bailing at 4,250 feet.

On the north side, Yount-Lee Co. has a derrick standing for No. 10 Merchant. Its No. 2 Stengler is drilling at 3,560 feet. Humble Oil & Refining Co. has a derrick for No. 3 Merchant. On the northeast, Gulf Production Co.'s No. 11 Morris Phillips is deepening at 2,980 feet. On the east side, Republic Production-Houston Oil Co. is jointly working over Nos. 51 and 53 Dolbear. No. 81 Dolbear is deepening at 2,700 feet, No. 84 is drilling around 2,400 feet and No. 85 is around 1,455 feet. On the southeast, Gulf Co.'s No. 43 Phoenix is rigging to start drilling. No. 29 Phoenix is fishing for tubing. No. 8 Thomas is drilling at 3,010 feet. No. 10 Baldwin on the south side is rigging. Houston Production Co.'s No. 11 Barngrover is drilling deeper around 3,300 feet. Around to the southwest side—Hull Pool having production on all sides—Texas Co. and Vacuum Oil Co.'s No. 3 Hannah joint is rigged to start. No. 2 Hannah is on air, making 1,200 bbls. per day. On the west side, Gulf Co.'s No. 14 Hannah Fee is drilling at 4,135 feet and No. 15 is at 1,415 feet. Humble Oil & Refining Co.'s No. 1 Hannah is around 1,625 feet. On the northwest, the Monarch Oil & Refining Co.'s No. 4 Miller is milling casing to sidetrack. W. B. Flynn's No. 4 Ray is at 2,235 feet. Red Canter Oil Co.'s No. 2 Canter on the dome is deepening at 695 feet. Mecom Oil Co.'s No. 3 Mecom is fishing at 3,350 feet and No. 6 is rigging to drill.

One rig is running in the old north Dayton Pool.

Other Pools

At Spindletop, Wilson-Breach Co.'s No. 10 Fort Worth is a 45-bbl. pumper at 760 feet. The discovery pool in the Gulf region continues to furnish some fair sized pumpers, notwithstanding it is 23 yaers old. The gross production to date there approximates 48,000,000 bbls.; remarkable when one considers the production area is only about 200 acres.

Rycade Petroleum Corp.'s No. 1 Gladys is drilling around 1,345 feet. Gulf Co. is rigging No. 151 Gladys. Stella Oil Co.'s No. 17 Hogg-Swayne is drilling around 980 feet. John Wynne's No. 1 Sunshine is at 945 feet. Unity Oil Co. started No. 84 McFadden.

At Barber Hill, Kirby Petroleum Co. and Mills Bennett jointly are starting No. 1 McKinney on the east side. Texas Co. and Kirby Petroleum Co. have a test started 1 mile enst of the dome. Coastal Oil Fields Co., Ltd., contemplates working over wells on the southwest side and drilling another deeper on the Barrow land. No new work has been done in that district, which is in Chambers County, 10 miles northeast of Goose Creek, for six months.

South Louisiana Pools

In Edgerly Pool, G. W. Gray's No. 7 Lillard is drilling deeper at 2,320 feet. A. L. Gibson's No. 2 Landry is deepening at 3,200 feet. Green Oil Co.'s No. 5 Moore is drilling at 2,700 feet and Evans & Stoval's No. 2 Wilson at 2,735 feet.

In Vinton Pool, Gulf Refining Co.'s No. 1 Gray is flowing 300 bbls. by heads at 2,000 feet. Same company's No. 12 Vincent is making 10 bbls. of oil and much salt water at 2,150 feet. No. 33 G. N. G. bailed dry at 2,625 feet. Wilson & Tucker's No. 8 Parks is a pumper at 2,600 feet.

Gulf Refining Co.'s No. 47 Gray is rigging. No. 32 Star is drilling. No. 2 Gray is a rig. No. 50 G. N. G. is around 2,655 feet. Vinton Petroleum Co.'s No. 47 Gray is at 1,155 feet. Gulf Coast Oil Co.'s No. 13 Vincent is around 1,980 feet. Marrs McLean's No. 5 Gray is sidetracking. Texas Co.'s No. 25 Gray is at 1,965 feet. Sun Oil Co.'s No. 2 Johnson is shut down at 3,200 feet, waiting for cement around casing to set. Just Oil & Refining Co.'s No. 2 Lyons is drilling deeper at 4,140 feet.

Outside of the pools, the Sun Oil Co.'s No. 1 Baldwin in St. Martin parish is drilling at 990 feet. Vacuum Oil Co. is drilling a test north of Lake Charles. In Evangeline Parish, Ville Platte Oil Co. started No. 1 Andrus, Section 51-4-2. Johnson Bayou Prospecting Co. is drilling its sixth formation test in Johnson Bayou, section of Cameron Parish. In Plaquemine Parish, Hero Oil Co.'s No. 1 is drilling at Fort St. Louis. In St. Landry Parish, Whitres Oil Development Co.'s No. 1 is drilling near Melville.

Calliham District

In the Calliham district in McMullen County, Everett & Adams cored the formations at 1,050 feet. The Grubstake Investment Co.'s No. 5 Lark is below 800 feet and No. 2 Calliham is drilling with a rig in for No. 3 Jacobs. Coquet and others' No. 1 Hecks is drilling at 300 feet. The Three Rivers Co.'s No. 4 Calliham is at 455 feet. Watkins &

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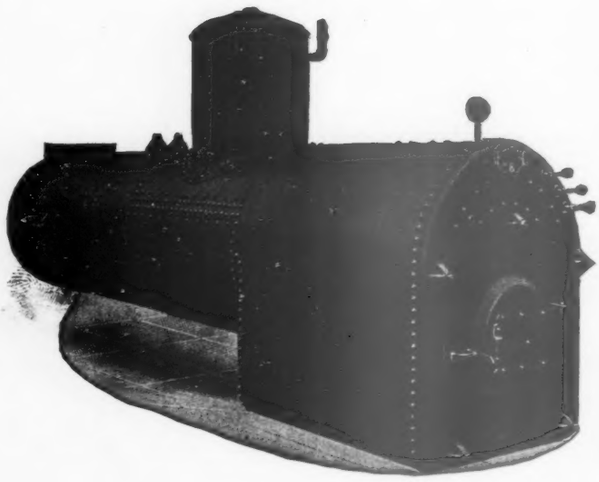

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Hill's No. 1 Lark is reaming at 1,000 feet.

Over in east Texas, Snell & Stratford's No. 1 in San Augustine County is shut down at 810 feet, after showing oil and water. In Shelby County, the We Win Oil Co.'s No. 2 on Flat Rock Creek is shut down at 2,470 feet. Deering's No. 2 Harris in Sabine County is idle at 2,600 feet. In Angelina County, Paggi Brothers Oil Co.'s No. 1 Henderson, 12 miles east of Lufkin is drilling at 400 feet. In San Jacinto County, Jones and others' No. 1 Bledsee, near Shepard is shut down. In Grimes County, Cobb and others have a derrick up for No. 2 Jones. Day & Cuthbert's No. 2 O'Connor is below 2,845 feet. The Terry Development Co.'s No. 1 Upchurch is idle.

In Anderson County, the Reeser Petroleum Co. set casing in No. 1 Simpson survey to test a gas show at 4,255 feet. The hole was drilled to 4,410 feet. In Franklin County, McNeil & Richardson's No. 1 Harper is drilling below 1,200 feet.

W. KENTUCKY-TENNESSEE

(Continued from Page 72)

Modoc. On the Spear farm, in the same area, the Paragon Development Co. plugged its No. 2 Spear at 1,427 feet.

Drilling Operations

Bear Creek: The Wabash Valley Oil & Gas Co.'s No. 1 Rush, between Bear and Otter Creeks, was drilling at 180 feet; McClintock Oil Co.'s No. 10 C. C. Smith is drilling below the Pencil Cave. The second Sunnybrook sand did not show for a commercial producer and was passed up; the Oil Fork Development Co.'s No. 1 F. F. Smith was down 632 feet, 12 feet below the Pencil Cave with an abundance of gas. The black and green cave, a volcanic ash, was 4 feet thick; Wilcox Brothers' No. 1 Pherris was spudding at 42 feet; same operators' No. 2 Sarah Sheckles is still being held up with a bad fishing job.

In the Sulphur Creek district, W. S. Raydure is moving a rig to No. 1 John Riddle which he will drill to the sand below the cave. No. 2, recently drilled to 603 feet, at the top of the cave, is still pumping at the rate of 25 bbls. daily. The Kanawha Oil Co. is making hole at 1,150 feet in its deep test on the Williams farm.

At Kettle Creek, W. S. Raydure's No. 3 Blythe is shut down at 360 feet with a fishing job; McClintock and others' No. 7 Bud Kerr was making headway at 180 feet; the Dayton Oil Syndicate's No. 4 Kim Crawford was going ahead at 400 feet. The bottom of the black shale was found at 208 feet. Coe and others' No. 1 Mary Scott was progressing at 300 feet. These last two mentioned wells are on the east side of Kettle Creek, less than 1 mile from the main stream. The McClintock Oil Co. is drilling its No. 4 Anderson to the pay below the cave; Colonel Petit's No. 1 Dodson was shut down at 600 feet.

W. S. Raydure's No. 1 Will Anderson, at Galloway Creek, was drilling at 500 feet; Vedder's No. 2 Thompkins, at Fanny's Creek, was on top of the stray sand at 180 feet. No. 1 made 17 bbls. from this pay. Wilcox Brothers' No. 1 Rainey, in the vicinity of Burkesville, was being cleaned out after a 40-quart shot in the cave sand.

GOOD TEST FOR TANKS

CASPER, Wyo., June 21.—The Columbian Steel Tank Co. sent a shipment of the firm's steel tanks into northwest New Mexico to care for the oil from the Hogback Field that the Midwest Refining Co. is operating there. Three tanks are to stand the heavy strains of tanks in the tropics as the Hogback Field is in an arid region where the thermometer reaches high points in the day and yet the altitude is such that often the nights are very cool, rendering the erection and maintenance of tankage a serious problem because of the great expansion. R. D. Miller, Wyoming agent for the Columbian firm, left for New Mexico where he will personally supervise the work.

Criticizes Figuring On Reserve Crude In "Day's Supply"

In a discussion of reserves of crude oil above ground, Arthur Knapp in Mining and Metallurgy, says:

"A figure representing the 'Number of Days' Supply,' of crude oil on hand is often used to estimate the economic significance of the crude oil reserve above ground. This figure is obtained by dividing the total stock of crude at the end of any period by the average daily consumption for that period. Since past consumption is usually used to derive the figure in place of the probable future consumption, it is inaccurate from that standpoint. Further, the 'Number of Days' Supply' would have a meaning only under the absurd circumstances that every source of supply was suddenly cut off completely.

On December 31, 1923, there was in storage above ground in the United States, approximately 363,000,000 bbls. of crude. The average rate of increase of total consumption from 1917 to 1923 was 13 per cent annually. If the total consumption in 1924 is 13 per cent greater than in 1923, then 363,000,000 bbls. represent 162 days' supply for the year 1924.

As a more rational basis for measuring reserves, let it be assumed that no new fields are discovered and that production plus imports declines as a composite decline curve of all of the present producing fields which are supplying crude to the refineries of the United States.

The average daily production plus imports on January 1, 1924, was 2,200,000 bbls. Assume that all of the wells which furnish this oil should decline at a uniform average rate of 10 per cent per year. Assume that the rate of consumption remained constant at the 1924 rate. The oil in storage would be exhausted in 846 days. This 846 days is, then, a more accurate measure of reserves under the most adverse conditions possible and represents the minimum time in which the reserves could be exhausted. The production plus imports would have decreased 24 per cent in the 846 days under the above conditions.

"The assumption that consumption would remain constant is not very reasonable because, under the assumed conditions, the price of refined products would soon rise to a point where their use would be more and more restricted as storage was drawn upon. The 846 days takes no account of the present enormous stocks of refined and partially refined products. On December 31, 1923, there were 108,000,000 bbls. of refined products in stock, which would be sufficient to postpone the total exhaustion of stocks at least 100 days, making approximately 950 days in all. It is more reasonable to consider the present crude oil reserve as a three-year reserve and not a five and a half month reserve."

VALUATION SURVEY IN OKLAHOMA AND KANSAS

To make a study of the situation in general in Oklahoma and Kansas oil fields, A. W. Foster, Joseph E. Devine and Harry A. Campbell, valuation engineers of the oil and gas section of the internal revenue department, will arrive in Tulsa Monday, June 30.

They have been instructed to make a field investigation, and to establish a closer contact with the oil and gas producers as well as to gather such information as will be helpful to the department in passing on valuations outlined under the 1921 law.

Of particular interest to the engineers are expected to be sales and transfers of property, local valuations, development and operating costs, production records, grades of oil and prices and premiums, records of oil run stored.

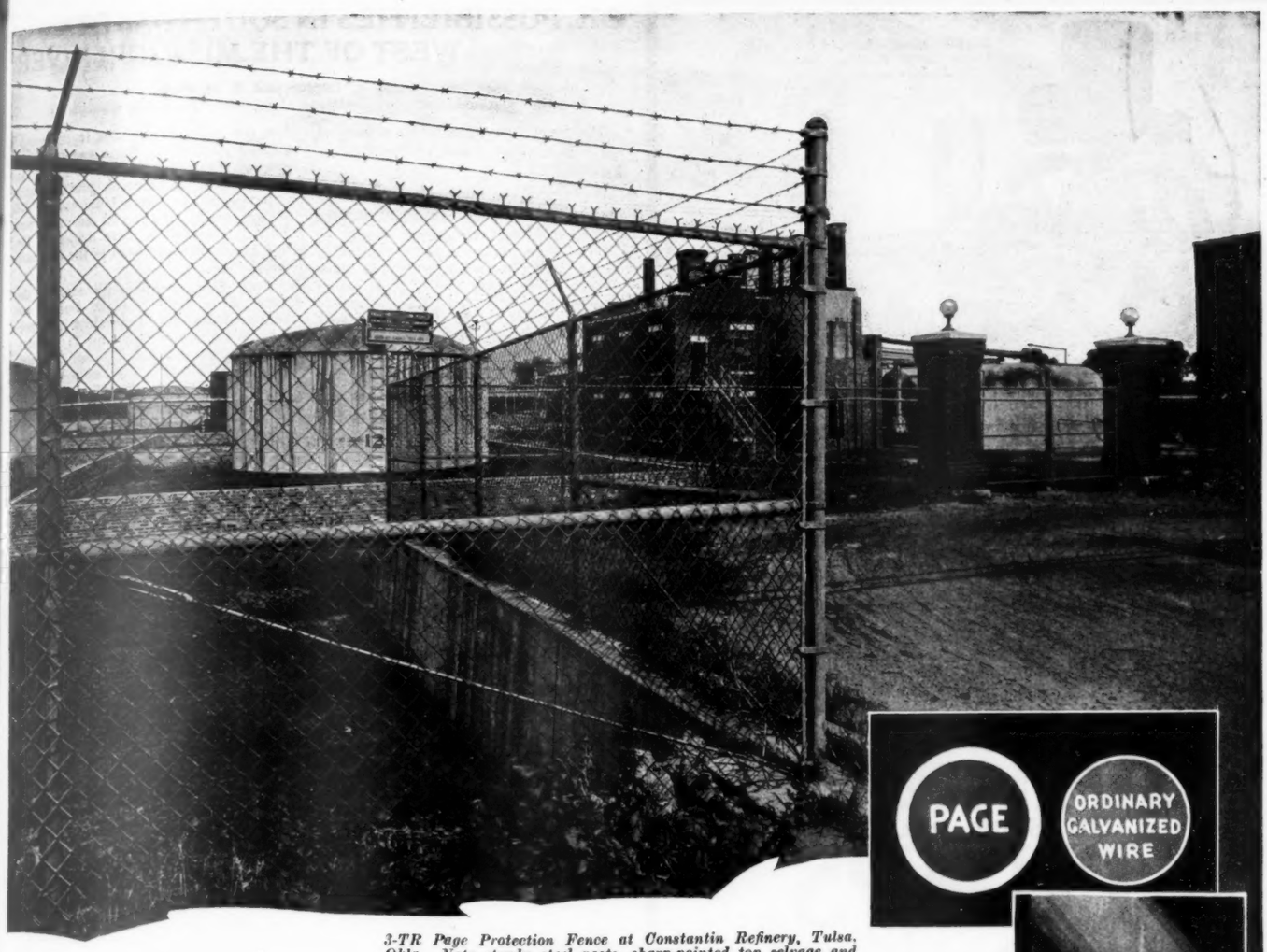

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Diagram showing relative thickness of Page Super-Heavy Zinc Coat and ordinary galvanizing.

Uniformity is important. Diagram shows evenness of Page Super-Heavy Zinc Coat at bend.

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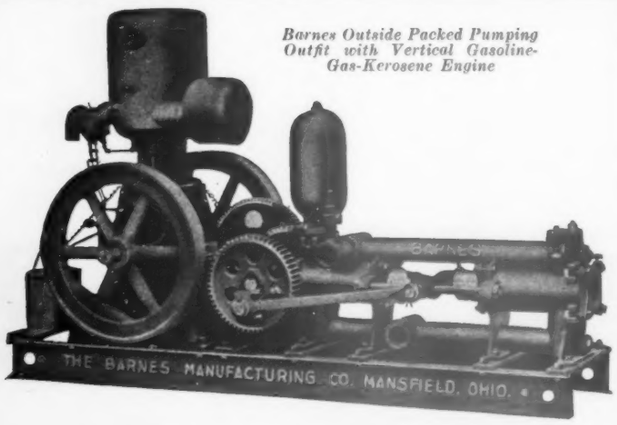

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OIL POSSIBILITIES IN SOUTH DAKOTA WEST OF THE MISSOURI RIVER

By Charles T. Lupton and E. M. Parks
(Published by permission of American Association Petroleum Geologists)

The area referred to is that part of South Dakota lying west of the Missouri River.

Reconnaissance examinations made by the senior author during 1920-22 resulted in noting several structures worthy of detailed examination, done by the junior author during the summer of 1923. The writers believe many more will be found by further investigation. It is desired to point out briefly that there are good structures capable of serving as reservoirs for oil and gas, and that the strata buried are the same as those that yield the oil and gas in Wyoming, Montana, and Colorado. The strata adjacent to the sandstone reservoirs are, so far as now known, just as rich in carbonaceous material in western South Dakota as in those States.

The Black Hills uplift in the extreme western part of the State, and the Lemmon Basin in the northern part, are the nearest major controlling structural features. Minor structures, 100-200 miles east of the Hills, necessarily have less closure than folds close to a major uplift. The most promising structures in western South Dakota occur in a north-south belt, about 125 miles east of the Hills where smaller closures than those nearer to the Hills may trap and hold oil and gas. These structures have closures ranging from approximately 100 feet to possibly more than 300 feet. The writers believe that structures with this closure, other factors being favorable, are worth testing, and that in some of them oil and gas are likely to be found in commercial amounts.

Although no oil or gas in large amounts has been found in western South Dakota to date, this fact does not mean that this part of the State is barren of oil and gas in commercial quantities. The writers see no valid reason why it should not contain some commercial oil and gas fields.

Development

Gas in small amounts has been escaping with water from artesian wells drilled to the Dakota sandstone in the vicinity and to the west of Pierre, on the Missouri River for a number of years. The Dakota sandstone in many places in this locality yields warm salt water, suggesting an area with slight, if any, water movement. This gas comes from the Dakota and also from thin sandstones and sandy shales above the Dakota. The gas shows are more common in the region about Pierre, but few wells have reached the Dakota west of there until the Black Hills uplift is approached.

A few wells were drilled in the southwestern part of the State and in northwestern Nebraska on what is known as the Chadron anticline, a southern continuation of the Black Hills uplift. No oil or gas in commercial amounts was found. Some wells were drilled to the Red Beds, having started in the Niobrara shale.

Near St. Onge, directly east of the Hills, wells drilled to the Dakota encountered gas said to contain a large percentage of helium. No oil in commercial amounts was found, although deeper drilling to the Sundance sand may find oil in commercial amounts. It is reported the St. Onge wells were drilled on structure.

Near Standing Butte, about 30 miles northwest of Fort Pierre, a well drilled to the top of the Sundance formation is reported to have encountered several shows of oil and gas, but nothing in commercial amounts. There is some doubt if this well was drilled on structure. One important thing this well showed was the presence of at least three sandstones capable of serving as reservoirs for oil and gas. (See accompanying log.) If shows of oil and gas are present on structure, wells drilled on structure should show more oil and gas.

In the vicinity of Lemmon, in the northern part of the State, two comparatively shallow wells were drilled, the maximum depth reached was about 1,450 feet. In one gas is reported at around 800 feet, and in the other an oil showing was encountered at approximately 450 feet and was brought up in a core sample. As far as the writers are aware, both of these wells are off structure. Wells on structure should contain more oil and gas.

LOG OF STANDING BUTTE WELL
Center Section 20-7n-27e, Stanley County, South Dakota

Pierre	0- 927	Shale blue.
	927- 933	Shale gray.
	933- 963	Sandy shale gray, dry gas.
	963-1100	Shale dark.
Niobrara	1100-1350	Shale gray.
Carlile	1350-1400	Shale dark.
	1400-1405	No record.
	1405-1415	Sand and water.
Greenhorn	1415-1425	Lime, gray.
Graneros	1425-1450	No record.
	1450-1500	Shale blue.
	1500-1525	Shale gray.
	1525-1610	Shale dark.
	1610-1661	Shale blue.
	1661-1676	Shale dark, 1,000 feet water in hole.
	1676-1690	Shale dark brown.
	1690-1735	Shale dark; cave at 1700-1710.
Dakota	1735-1770	Sand.
	1770-1785	Sand, oil, gas at 1760
	1785-1905	Sand, gas and water.
Fuson	1905-1920	Shale brown.
	1920-1940	Shale dark.
Lakota	1940-1976	Sand, water.
	1976-1980	Shale dark.
	1980-1995	Shale light.
	1995-2000	Shale dark.
	2000-2005	Coarse gravel.
Morrison	2005-2015	Bentonite.
	2015-2020	Shale, dark, gas increasing.
	2020-2030	Shale light, gas increasing.
	2030-2035	Shale dark, gas increasing.
	2035-2050	Shale light, gas increasing.
	2050-2100	Shale, variable in color.
	2100-2190	Shale dark.
Sundance (Unkpapa)	2190-2270	Sand, artesian sulphur water, gas; reported oil show.

A well drilled in Irish Creek in the northwestern part of the State by means of a diamond drill encountered showings of oil according to reports. This well will probably be drilled deeper the ensuing spring and summer. It is reported to be on structure.

A well drilled near Bear Butte close to the Hills and adjacent to an igneous intrusion did not encounter either oil or gas in encouraging amounts.

Oil showings were reported in a well drilled near Gregory. At this locality there is no evidence of structure.

Some drilling was done in the extreme southwestern part of the State west and northwest of Ardmore but without encouraging results.

Shallow wells drilled near and to the south of Edgemont encountered paraffin base oil in small amounts.

A well was drilled on a small struc-

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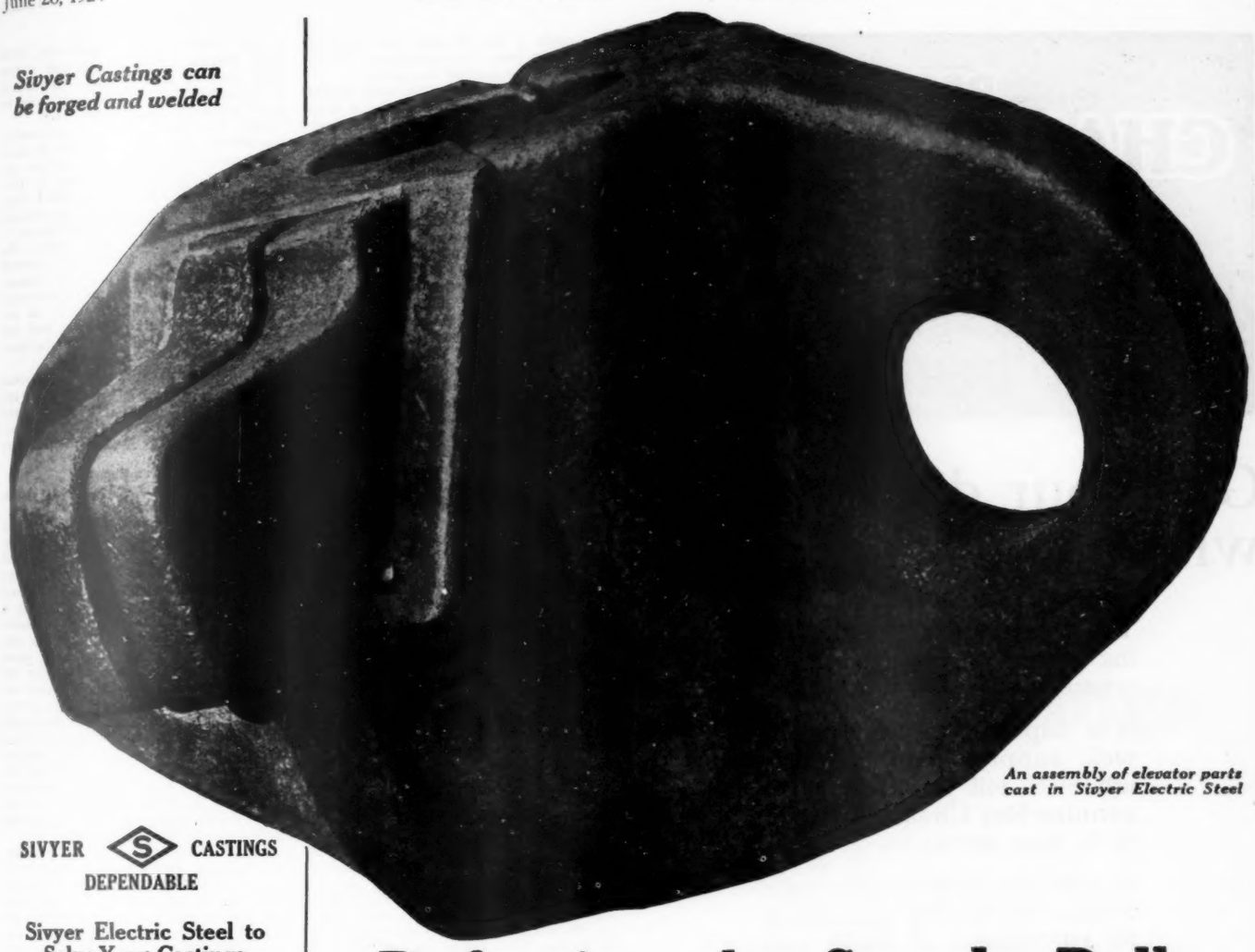

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ture north of Hot Springs to a depth of 1,000-1,100 feet. It encountered no oil or gas in commercial amounts.

The fact that none of the wells drilled to date encountered oil and gas in commercial amounts is not conclusive evidence that western South Dakota is barren of these substances. Approximately 100 wells had been drilled in Montana, prior to the opening of the famous Cat Creek Field in Fergus County. All had been drilled with the hope of obtaining oil or gas in commercial amounts and many wells were fairly well located on structure.

Evidences of Oil and Gas

During 1922 and 1923 at least two wells were drilled in the vicinity of Lemmon, South Dakota, both off structure as far as known. The deepest reached a depth of 1,450 feet and there is strong evidence that near the bottom the drill encountered a few feet of fine brown sand saturated with oil. The drill is then reported to have entered water saturated sandstone. It is reported this well will be drilled deeper this year. The horizon where the oil was reported is approximately in the Fox Hills sandstone.

Another well drilled about 1,000 feet deep encountered some gas at around 800 feet. The well was drilled deeper but without encounterding either oil or gas in commercial amounts. Being off structure as far as the writers are aware, the surprising fact is that any shows of oil and gas were encountered.

Several wells drilled for water to the Dakota sandstone in the vicinity of Pierre encountered gas with warm salt water. The gas is present in sufficient amounts to supply dwelling houses nearby. The flow has continued apparently constant for approximately 20 years. Most of the gas produced is from Dakota but other sands above yielded gas shows.

Along one of the fault planes near the crest of the Zeal structure, gas in small amounts is continuously escaping. It is inflammable and has a strong natural gas odor.

It is reported on good authority that wells drilled to the Dakota sandstone on the St. Onge structure yielded gas rich in helium. The writers are not informed as to the amount of the flow.

Shallow wells drilled a few miles south and southwest of Edgemont are reported to have obtained small amounts of oil, not in commercial amounts.

of this overlap area in formation older than Dakota are suggested and a few deep tests of favorable structure would be warranted. The conditions may be more favorable than further west.

The Cretaceous section surrounding the Black Hills is so constant in character and thickness as to prove that the Hills were entirely submerged in Cretaceous times, and the eastward thinning and decrease in sandstone content from Wyoming across South Dakota to the Missouri River indicate most of the sediments came from the west. Toward the Sioux quartzite ridge the Dakota thickens first, then disappears, and sandstones become more prominent in the Benton close to the ridge. This land was a source of sediments, but not the main source of Cretaceous sediments.

In the writer's judgment the western border of this overlap zone where it approaches the southeastern rim of the Lemmon Basin is the most favorable region for oil and gas where suitable structures exist.

Formations

The general areal relations are shown on the sketch map.

White River and Younger Tertiary formations outcrop over a large area in the southwestern and southern part of the State, and in scattered small areas north to the State line and northeast almost to the 102° meridian. Over a large area they totally mask the underlying geology. They are strongly unconformable on older formations down to Pierre and older formations near the Black Hills and are fresh water deposits of various kinds. Structures within the Tertiary cannot be work out with certainty, but there is no doubt these formations have been tilted and faulted. In the Slim Buttes area they are remarkably faulted in post-Oligocene time. Wherever the older formations do not outcrop structure cannot be well enough determined to warrant drilling.

Small areas of Fort Union formation, coal bearing, of fresh water origin, occur in the northwestern part of the State. The total thickness is only a few hundred feet or less. Structure within the Fort Union areas can be fairly well worked out but drilling to the Dakota would be 4,000 feet or more.

The fresh water Lance formation resembles the Fort Union and contains the Cannon ball Marine member. It is composed of cross-bedded sandy clays, sandstones, lignitic shale, and thin coal beds. It covers a large area in the northwestern part of the State. It is up to 500 feet or more thick, and contains no horizons that can be followed for key beds, and dips and strikes observed are not reliable. Along many rivers this formation is cut through and the Fox Hills below exposed. Structures worked out in the Fox Hills are more reliable, and luckily it outcrops over considerable area most favorable for oil and gas.

STRATIGRAPHY OF STANDING BUTTE WELL, STANLEY COUNTY
Black Hills and Northeast of Hills; Cretaceous Taken From Newell Folio

Tertiary	White River and younger	...	
	Fort Union formation	400	
Tertiary or Cretaceous.	Lance formation containing Cannonball member	700	
Cretaceous—			
Montana	*Fox Hills sandstone	25-400	
	*Pierre shale	1300	*1100
Colorado	Niobrara formation	150-200	250
Benton	*Carlile shale containing persistent thin sandstones	550	65
	Greenhorn limestone	25-35	10
	*Graneros shale containing thin sandstones and Mowry shale	1100-1200	310
Dakota	*Dakota sandstone	40-80	*170
	Fuson shale	60-80	35
	*Lakota sandstone	60-150	65
	*Morrison formation	0-150	185
Jurassic	*Unkpapa sandstone	0-250	*80
	*Sundance formation	60-400	
Triassic	Spearfish formation (red beds)	350-600	
Carboniferous	Minnekahta limestone	30-50	
	Opeche shale	90-130	
	*Minnelusa sandstone	450-750	
	Pahasapa limstone	250-700	
	Englewood limestone	25-50	
Ordovician	Whitewood limstone	0-80	
Cambrian	Deadwood sandstone	4-450	
	Pre-Cambrian basement rocks	...	

*Shows of oil or gas reported in western South Dakota or west of Black Hills.

Stratigraphy

There is a great change in conditions of deposition between the Black Hills and the "Sioux quartzite Ridge" in eastern South Dakota. In the Hills there is a large thickness of rocks older than the Dakota which drop out eastward by overlap of the Dakota on the quartzite ridge. Even the Dakota is not present below the Colorado on the flanks of the ridge. West of the Missouri River very few wells go below Dakota, but the Standing Butte well in Stanley County shows the Morrison and probably Sundance. The overlap therefore takes place east of the 101 meridian as well as can be determined. Interesting possibilities for oil and gas accumulation just west

Fox Hills (Cretaceous)

In apparent conformity below the Lance is the marine Fox Hills. It is up to 400 or more feet thick, usually less, and better bedded than the Lance. It is of marine origin and in places marine

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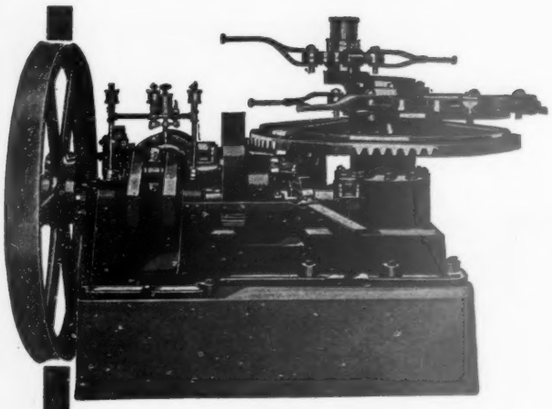

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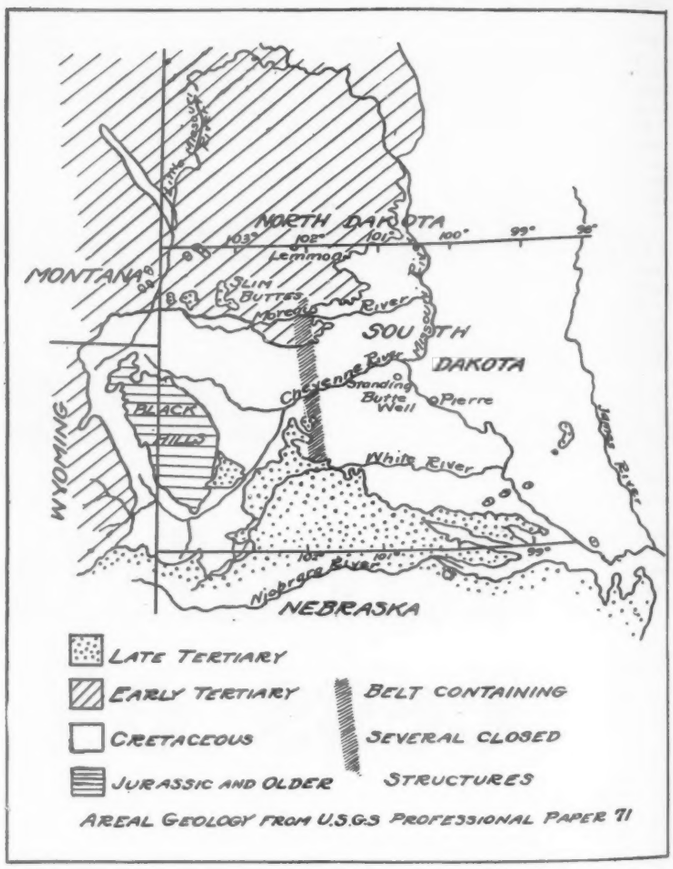
fossils extend 75 to 100 feet up into Lance-like sandy clays above the Fox Hills sandstone. The upper part of the Fox Hills contained a characteristic yellowish gray, rather massive sandstone 30 to 40 feet thick, containing large roundish brown sandstone concretions. At the top of this sandstone there is commonly a projecting shelf of very hard ferrugidous standstone formed by the weathering of a marcasite concretionary layer. This protects the softer sand below and forms sheer cliffs and walls. Remarkable exposure of this sandstone and the Lance contact occur for miles along Moreau River and Deep Creek, where it is cut by many faults. Above this sandstone over large areas is a brown lignitic shale several feet thick. Above this are Lance-like sandy gray shale and sandstones and brown carbonaceous shales which occasionally resemble the Fox Hills so much as to be confusing unless the Fox Hills have been followed closely in mapping. Below the Fox Hills sandstone are interbedded sandstone and gray shale forming a transition zone into the Pierre. No definite boundary can be determined at the base. The Fox Hills sandstone member is the only good horizon marker in the whole area.



AREAL GEOLOGY FROM U.S.G.S PROFESSIONAL PAPER 71

Pierre Shale

This is a dark gray to black shale in places sandy. The thickness varies from 1,300-1,400 feet near the Hills, to less eastward. It outcrops over enormous areas. The upper few hundred feet are somewhat harder, contain thin concretionary limestone beds, and roundish or flattish limestone masses, and this part of the formation is less prone to slump than the middle of the formation. It contains thin streaks of bentonite, and much organic material. Thin streaks of rather rich oil shale have been found in it. No sandstones suitable for reservoirs are found over most of the area but the slight oil and gas shows met in some wells in the Fox Hills probably come from the Pierre shale, and gas shows in the Pierre are reported. Structure in the Pierre shale is very difficult to determine. Slumping simulates true dips, the whole side of a minor divide may slip toward the valley, and the resulting dips are away from valley. Over large areas it is the only outcropping formation. It undulates somewhat and is faulted and gently folded in many places. Where the upper part occurs structure can be worked out with some assurance along the main streams but there are no horizon markers. The gas seep east of Zeal in Meade County is from a small fault 300-400 feet below the top of the Pierre.

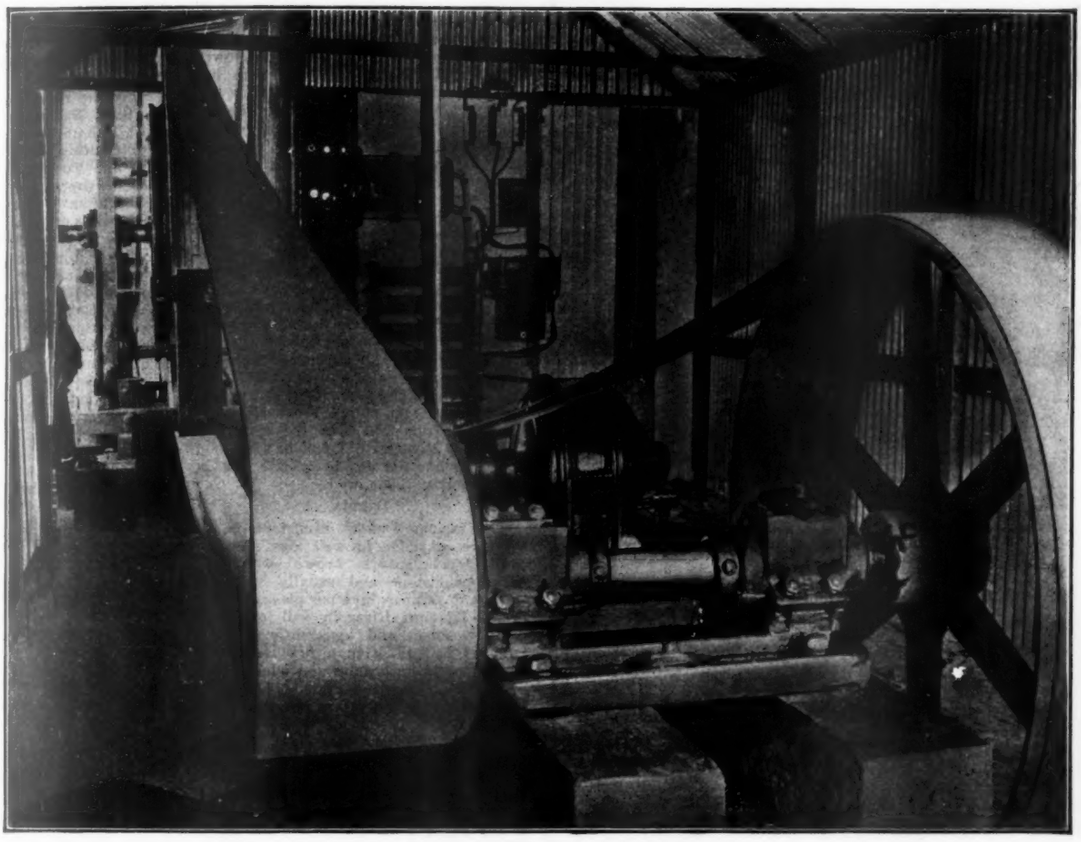
Niobrara Formation

In well logs the Niobrara is often not distinguished. It is an impure chalky limestone or limy shale. It is whitish or yellowish in weathered exposures, in wells grayish to light bluish, occasionally whitish. It is 70-200 feet thick, usually 150 in well logs, and can be recognized if the log is carefully kept. The Niobrara does not outcrop west of the Missouri River except around the Hills and the Chadron anticline. Below Pierre several miles it appears in the Missouri River valley and outcrops continuously southward.

The Benton group includes three formations which contain the most important oil sands in Wyoming. Some thin sandstones are found in it in South Dakota and it is presumably one of the most important parts of the section for the oil and gas prospector.

At the top of the Benton group is the Carlile shale very similar to the Pierre in character and appearance but much more likely to contain thin sandstones. In the Newell quadrangle it has persistent thin sandstone near the base, and is 550 feet thick. It contains much organic material in places so abundant it will burn. East of the Missouri River it is much thinner than around the Black Hills and carries a thin sandstone near the top which is a well recognized water bearer with occasional shows of gas. Other thin sandstones are recorded in many wells east of the Missouri River and this general horizon is one of the most likely prospects for oil in good structures.

Greenhorn limestone, a thin, slabby,



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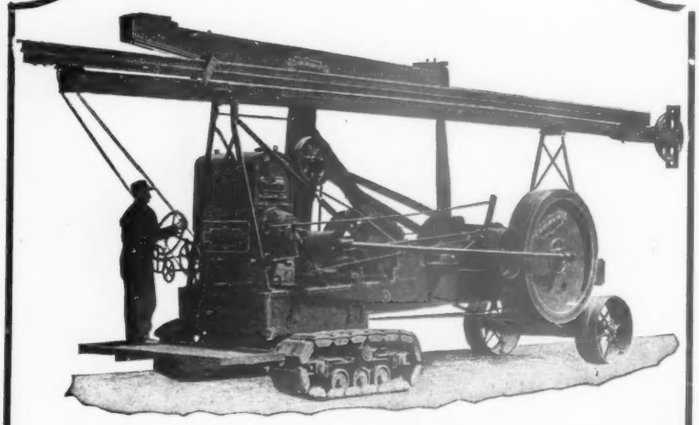

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impure limestone, is usually recognized in well logs and easily recognized in outcrops. Thickness 25 to 35 feet. It is not everywhere recognized in well logs east of the Missouri River but generally present.

Graneros Shale

For the most part similar to the Pierre and Carlile except for the Mowry shale member over 200 feet thick just below the middle of the formation. The Mowry is hard, siliceous, brittle shale with fish remains. It is probably of partly organic origin. Below the Mowry in the Black Hills region there is a persistent sandstone up to 30 feet thick. In some places it is thin or absent. This is the persistent Muddy sand of Wyoming (Newcastle sand west of Black Hills and Upper Dakota of W. T. Lee.) The Graneros is 1,100 to 1,200 feet in the Black Hills and much thinner east of the Missouri where it commonly carries thin sandstone beds which are often water sands with occasional shows of gas. Just how far east the Mowry shale member continues is not known.

Whereas the Benton group (Granerous, Grenhorn, Carlile) is over 1,600 feet thick in the Newell quadrangle near the Black Hills, east of the Missouri River, it ranges from 250 near the mouth of the James River to 617 feet in a well on the Cheyenne agency, being 385 feet in the Standing Butte well.

Dakota

The famous Dakota sandstone is always recognizable in well logs. In the Hills it is a gray to brown medium to coarse sandstone and usually 100 feet thick but thinner in some places. East of the Missouri River in well logs it is more variable and apparently several hundred feet thick in a few wells and rests directly on granite and quartzite.

In the Newell quadrangle is Fuson shale, "gray to purple sandy shale and thin beds of limestone," 60 to 80 feet thick, not definitely recognized in wells along the Missouri River but the Standing Butte well in Stanley County found 35 feet of shale below the Dakota.

The Lakota is similar to the Dakota in the Black Hills and 60-150 feet thick. Not recognized east of the Missouri River but possibly logged with the Dakota.

The whole group from the Muddy sand down to and including the Dakota is called the "Dakota Group" by W. T. Lee in his useful summary of the Dakota, and the classification appears as sound for this area as where first applied but is likely to lead to confusion since the middle sand is the one popularly called the Dakota.

Formations Below Dakota

The Black Hills section below the Dakota is well known. It contains sandstones, shales, red beds, and thick limestones. East of the Missouri these rocks are absent, but they probably occur over most of western South Dakota nearly to the Missouri River. Nothing can be said except that they will exhibit differences due to near shore conditions.

Structure

Darton's Great Plains maps shows the general structure. The Glendive anticline enters the northwest corner of the State and is well marked with minor structures east and west of it. The Black Hills uplift has minor structures associated with it, particularly the Chadron anticline in the southern part of the State. Over the remainder of the area there are no large well marked anticlines, but many low domes and anticlines and faulted areas which had not been worked out when Darton's map was published.

The Lemmon Basin

Over a large part of the State the depth to the Dakota is based almost entirely on assumed thickness of formations from Lance down to Dakota, since many counties do not have a single well to the Dakota. That the Lemmon Basin exists there can be no doubt, and in a careful examination of parts of three counties on the southeast part of the basin no less than five domes which are closed were discovered. Wherever the Fox Hills outcrops one can work out structures with considerable assurance, and the upper part of the Pierre shale along main streams can also be worked out. Around the Lemmon Basin west of where Darton's map shows a flattening of the dip are many small structures. Some of them warrant a thoroughgoing test. The South Dakota State surveys has studied several.

Faulting

The difference of interpretation by Todd, Winchester and Toepelman concerning the meaning of the structure of the Slim Buttes area in northwestern South Dakota is curious. Todd attributed it to faulting, Winchester to cross-bedding, and Toepelman to slumping. The junior writer has examined this area twice and has no hesitation in confirming J. E. Todd's early interpretation of faulting, and very striking faulting it is, too. In Meade and Perkins Counties there are a great number of faults, a few with a throw of 100 feet. These faults seem to bear definite relation to anticlinal structures as though they are tension faults caused by deep seated doming. In most cases the faults dip toward anticlinal axes and are normal faults. If the interpretation is correct these structures are probably more pronounced below than at the surface. The writers view the faulting as distinctly favorable to the existence of structures and also to oil accumulation.

The margin of the Lemmon Basin where the dips flatten out ought to be a particularly favorable place for oil accumulation and the best structures known to the writers occur in this general position. Dips up to 10 degrees are quite common, although closely associated with faults. In several cases closure of 20 to 80 feet have been worked out by various geologists on the Fox Hills sandstone. In other structures where there are no good horizon markers the dips and general relations suggest much more closure.

On the sketch map a north south belt is indicated which includes several structures which are closed. All of these have been examined. This belt of structure suggests a long anticlinal similar to the Glendive anticline and the Chadron anticline but not so well developed. Faulting is common on these structures. A detailed examination of all of western South Dakota may reveal many more structures outside of this belt.

General Conclusions

That part of South Dakota lying west of the Missouri River is underlain by the same beds that yield the oil and gas in Wyoming, Colorado and Montana.

Structures are present in the same area with closures ranging from 100 to more than 300 feet. The area most promising lies from 100 to 200 miles east of the Black Hills uplift where the writers believe the closure is sufficient to trap and hold oil and gas.

Five promising structures lie from 10 to 20 miles from the railroad. Other structures of equal promise are as far as 40 to 50 miles from the railroad. One structure is crossed by a railroad and another is slightly more than 20 miles from a railroad station.

Oil and gas shows have been noted at widely separated points in the western half of South Dakota but not in commercial amounts to date.

With these conditions in mind the writers cannot help but predict that oil and gas in commercial amounts will be found in some of the structures in the western half of South Dakota upon careful tests being made down to and including the Sundance sandstone which can be encountered by the drill at depths ranging from 2,500 to 3,500 feet. Within this distance three well developed sands, Dakota, Lakota and Sundance, and three horizons that locally may be well developed, Greenhorn, which has sandy phases in the Black Hills region; Muddy, which yields the oil in the Osage (Wyoming) Field, and possible sands in the Morrison formation.

Other promising structures are likely to be found upon careful examination.

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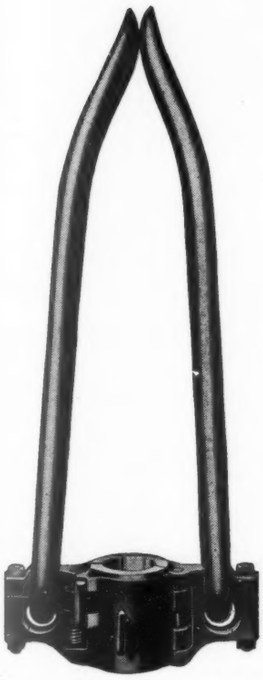

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REFINING AND MARKETING

OKLAHOMA A. AND M. TO HAVE OIL COURSE

STILLWATER, Okla., June 21.—Special short courses along various phases of the oil industry are being given at Oklahoma A. and M. College here. A score of companies in the State have been represented at the first session which started here the first of the present week for a course of instruction which will last two weeks. A second course will be given later in the month. Many other companies are expected to send representatives, according to A. H. Abbott, of Oklahoma City, supervisor for the trade and indsutries under the State Department of Vocational Education.

Plans for teaching of vocational education to employes by the companies which employs them are to be worked out. Courses of training to fit the demands of the different industries are to be planned, so coordinated that the State Department of Vocational Education may assist in the teaching and also in developing and furnishing teachers, Abbott said.

The oil group will be under the direction of Thomas H. Quigley, regional agent for trade and industrial education for the Federal Board of Vocational Education at Washington. Charles W. Briles, State Director of Vocational Education, will preside at the conferences of the general industrial group.

At the same time these conferences are under way, William T. Bawden, associate superintendent of public schools, Tulsa, formerly with the national bureau of education, will give two four-week courses in industrial education in connection with the A. and M. college summer course.

These two courses are under way, and enrollment includes 45 manual training teachers from larger State high schools, according to DeWitt Hunt, head of the shop department on the regular college faculty.

Individuals and firms which have signified they will attend or be represented at the oil group conference are:

G. W. Canfield, general manager, Canfield Refining Co.; C. B. Carter, general manager, Sun Oil Co.; L. B. Hancock of the Yale Oil Corp., and C. R. Virtue, general manager, Southern Oil Co., all of Yale, Okla.

Curtis Bailey, general manager, Empire Refining Co.; W. E. Moody, vice president and general manager, Shaffer Refining Co.; Charles E. Welch, general manager, Illinois Refining Co.; Ben Wallace, general manager, Pure Oil Co.; Thomas Williams, general manager, Sinclair Refining Co., all of Cushing, Okla.

H. A. Beck, superintendent, Tidal Refining Co., of Drumright.

C. C. Peppers, general manager, Champlin Refining Co.; T. T. Eason, general manager, Bolene Refining Co.; D. A. Dean of the State Refining Co., and E. L. Kittridge, Southwestern Oil Co., all of Enid, Okla.

R. O. Van Thorne, superintendent and three men from the Cosden Refining Co., and O. Holmes of the Texas Refining Co., of Tulsa.

Thomas Bodine of the Sapulpa Refining Co., Sapulpa.

SINCLAIR CHICAGO CHANGES

CHICAGO, June 23.—The offices of the Sinclair Refining Co. in the Conway Building, Chicago, are gradually being deserted by the office force and managers as these are being transferred to their New York City or the Rockwell Street offices. The latter has been the headquarters of the local division for some time and the local accounting department is being transferred to that place. The legal department is being removed to New York City. J. M. Cudahy and Sheldon Clarke still retain their offices in the Conway Building.

NORTH CAROLINA ATTORNEY GENERAL CONDEMNS GASOLINE PRICE WAR

Acting under the authority of the anti-trust laws, Attorney General J. S. Manning, of North Carolina, has issued a ruling prohibiting the sale of gasoline by retailers located outside the corporate limits of cities at a more reduced price than 2 cents below the prevailing market price within the cities.

Raleigh had been suffering from a severe price cutting war for more than six weeks and had brought numerous variations in the price of gasoline. Differences in service station prices had run as high as 4 cents per gallon. Stations just outside the city limits had cut their figure to 20 cents while the city market was 24 cents.

The attorney general made an extensive investigation into the cost of distributing gasoline and expressed himself that it was impossible for a dealer in the city of Raleigh and other large cities of the State to make a legitimate profit by selling gasoline at 20 cents. Since last summer Mr. Manning has been working for the establishment of a uniform price for gasoline throughout North Carolina, according to reports.

"I do not think that I would be justified in my efforts to get and have established a uniform price of gasoline in the State, to permit that condition to be deflated or impaired by a gasoline price war in one of our cities of the State, however desirable it may be to the public to pay as little as possible for the gasoline consumed," he said. "Such a condition cannot be more than temporary and when dealers are forced out of business or forced into bankruptcy, then those who survive will undertake to recoup losses by increasing the price of gasoline."

HYPOCHLORITE PROCESS

A new process in treating refined light oils seems to have created a flurry in refining circles recently. News dispatches from New York City declare that the Mathieson Alkali Works has signed contracts with the Pan American Petroleum & Transport Co. and Cosden & Co. for the use of its patented hypochlorite process in treating gasoline.

The Mathieson process claims a saving over the present method of treating by means of acid and caustic and washing with water. The process consists of washing the gasoline with a weak solution of hypochlorite of lime, made at the plant from liquid chlorine. No important changes in the equipment are necessary in installing the process.

Reports state that the Anglo-Persian Oil Co. found its costs for treating Persian oils by the hypochlorite method were only 40 per cent of what they had been with the acid and caustice method. Other advantages claimed are the elimination of acid sludge troubles, and greater ease in refinery operations.

The Royal Dutch Shell Co. is said to be considering plans to equip its refineries in America and Europe with machinery for using silica gel in refining its light oils. C. Wilbur Miller, president of the Silica Gel Corp. is reported now on his way to Europe to discuss arrangements with executives of the Royal Dutch Shell interests, relative to the use of silica gel.

OIL IN LOUISIANA LEGISLATURE

Several bills were introduced recently in the State Legislature of Louisiana, in which the oil and gas business comes in for further regulation. The Senate and House both were active in oil legislation. House Bill No. 263, introduced June 5, is an act "amending an act to provide for gauging and inspecting coal oils and illuminating oils, or fluids derived wholly or in part from coal or petroleum; to regulate the sale and disposition of the same; to prohibit in certain cases the sale or disposition of illuminating oils or fluids dangerous to life and property, etc." Taxation matters, prohibition of waste and wasteful use of natural gas, pollution of waters and many other minor matters also were embodied in other bills.

BUILDS LOS ANGELES TANKS

LOS ANGELES, Cal. June 21.—General Petroleum Corp. will start work at once on two 80,000-barrel tanks, material for which was purchased last year and stored.

A. O. M. A. MEETING

CHICAGO, Ill., June 21.—There will be a meeting of the officers, excutive committee and the directors of the American Oil Men's Association at the University Club in Chicago on June 27. President A. J. Callaghan announces he will have something of prime importance to the members to announce at that meeting. The report on the publicity campaign to date will be made and the future list of addresses and speakers announced. John D. Reynolds, secretary of the association, is at Atlantic City in attendance at the conference called by A. P. I. to consider the plan of a campaign of public education.

REFINING COMPANY CHARTERS

OKLAHOMA CITY, Okla., June 23.—Two crude oil refining companies with headquarters in Tulsa were chartered recently by the secretary of state. They are the Looboyle Refining Co., capital stock $100,000, incorporators R. A. Kleinschmidt, Nova M. Guthrie and Marvin T. Johnson, all of Tulsa; and the Aztec Refining Co., capital stock $5,000, incorporators Herbert Storek, John T. Lindsay and E. E. Lindsay, all of Tulsa.

BURNER FUEL DEMAND

CHICAGO, Ill., June 23.—The Spencer Petroleum Co., of Chicago, will specialize on all grades of burning oil this coming season and is now making contracts for the year or for the season from September to May. It reports an eager inquiry from out of the city jobbers for contracts over the winter for all grades of domestic burner fuel.

WISCONSIN JOBBERS MEET

CHICAGO, June 21.—The June meeting of the Wisconsin Independent Oil Jobbers held at Plankington Hotel in Milwaukee, this week, was large and the sentiment of the members was that the worst was over. Only routine business was given attention.

SHELBY TO HAVE REFINERY

SHELBY, Mont., June 21.—Reports here indicate that a 1,000-bbl. refinery will be constructed here soon by "Tip" O'Neil, well known Mountain States oil producer. At the present time there are 155 producing wells in the Kevin-Sunburst Field from which the proposed refinery will draw its crude supply.

NEED FOR DRAINING OIL IN CRANKCASE

Why do oils emulsify in the crank cases?

T. C. Hendrickson, a lubricating engineer for the Pure Oil Co., states that few motorists realize how low the quality of oil in a crank case becomes after a car has been driven a few days, regardless of the quality of the oil when it was put in.

"About all the general public knows about it is that the oil thins, gets black and full of dirt, or chunks of mud, as they explain it, or a greasy sludge," says Hendrickson. "Our department was called on recently to give an answer to these complaints. The cause given was that sludge will form from water, oil and carbon emulsifying, water coming from cylinder leaks or condensation inside of crank case.

"Upon taking some of the mud-like settling from the crank case and placing it upon a blotter, a great deal of it was abosrbed, also a portion of it evaporated upon placing it near steam pipes. What was left was run through a still and the final result was that 65 per cent was gasoline at a 450 end point. This breaks all previous records on crank case distillation. This unusual amount of gas is found only where engines are not performing properly, also in cold weather when the choke is used excessively. Every one interested in the oil business should know what is found in the crank case of an internal combustion engine, after having been operated some time, so they could explain intelligently and accurately the importance of using a high grade mineral oil, and also the importance of draining the oil regularly on the mileage basis."

ENLARGE MUSKOGEE PLANT

MUSKOGEE, Okla., June 23.—The Oklahoma Producing & Refining Co., a subsidiary of the Pure Oil Co., which operates the Muskogee Refining Co.'s big refinery in Muskogee, has purchased from the Spaulding interests 22 acres of land adjoining the refinery site, to the west and across the M. K. & T. tracks. Acquisition of this tract of land bears out previous reports that the company will in due time make important additions to its present equipment and expand its refining capacity to about twice the present size.

A new 40-mile pipe line from the Bristow district to connect with company lines in the Bald Hill district, will insure the Muskogee plant a constant supply of high grade crude.

STERLING PLANT TO CLOSE

WICHITA, Kans., June 21.—The Sterling Oil & Refining Co. of this city will close its local refinery within a few days according to an announcement of the receiver of the company. The shutdown, it is said, is due to the unfavorable market conditions. The plant will be closed for an indefinite period. The receiver has leased a large number of tank cars to another refinery.

NEW MOTOR FUEL?

CASPER, Wyo., June 21.—A new motor fuel made by introducing hydrogen gas into the residue of topped crude, is the claim made by the Wadolene Refining Co., of Salt Lake City, which recently acquired the patent rights and equipment for making and marketing the product in Utah and Nevada. Reports from Salt Lake City assert that the process is being used successfully at Santa Fe Springs, Cal. The introduction of the hydrogen gas is made without pressure and by use of comparatively little heat, according to reports.

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Chemical Structure of Motor Engine

Catalytic Coating for Surface of Cylinder Head Suggested for Counteracting Carbon and Detonation. Accelerates Combustion

By Dr. Edward Sokal

The purpose of this paper is obviously not to go into the details of the construction of the internal combustion engine; we all know more or less what the chief constructive features of an internal combustion engine are and this knowledge must be here presupposed. My intention is only to call attention in a very general way to a few fundamental questions concerning the structure of the internal combustion engine as viewed from the standpoint of its chemical, rather than of its mechanical requirements. It goes without saying that the line of demarkation would be difficult to draw, and no attempt is made to establish distinct boundaries.

During the last few years I have devoted a great deal of time to the study of this subject, both from a purely theoretical and from a practical standpoint, and it seemed to me and to some of my friends that some of the theoretical considerations to which I have been led and certain practical results I have reached may not be wholly without interest to the chemical fraternity. The remarks which I wish to present to you are wholly unpretentious so far as systematic completeness is concerned; on the other hand, I take of course, full responsibility for any statements of facts which I may make, inasmuch as these facts may not be a matter of common knowledge.

Chemical Requirements

Let us cast a rapid glance at the functional chemical requirements of an internal combustion engine, particularly the high speed automotive engine, not so much on account of its overwhelming commercial importance, but because my own work happened to refer mostly to this type.

In an internal combustion engine the energy of a chemical substance, namely the motor fuel, is converted into mechanical energy and useful work. By introducing the air fuel mixture into the so-called combustion chamber, preferably in a state of perfect vaporization and intimate uniform dispersion in suitable proportions of the two ingredients and by igniting the mixture through special, usually electrical, means of ignition, a very violent and rapid chemical reaction in the combustion chamber ensues, a very large percentage of the hydrocarbons in the motor fuel is burned to carbon monoxide, carbon dioxide, and water, and through the heat of this reaction the pressure of the gaseous substances is increased and causes mechanical work as motion of the piston.

This process is very often called an "explosion," but you will be aware that this term without further qualifications can easily lead to misunderstandings. If, by explosion is meant the chemical reaction, which progresses in space, due to the fact that the excess heat of the chemical reaction of a certain limited number of molecules, which by ignition have been brought into a state of very high reaction velocity, tends to bring the adjacent molecules into a state of high temperature and reaction velocity, then and to this extent, the process taking place in the combustion chamber of an automotive engine may truly be called an explosion.

Different From Explosions

However, it must be borne in mind that this process is chemically different from processes ordinarily called explosions, as for instance, the decomposition of nitroglycerine or acetylene, in which case unstable chemical substance are rapidly decomposed into a number of molecules larger than the number contained in the original substance, this process being usually accompanied by a change of the aggregate state from solid or liquid to gaseous with a corresponding tremendous increase in pressure. In this "real" explosion, the chemical energy changes practically directly into volume energy, and this transformation is not restricted by the limitation which nature has imposed upon the transformation of heat into mechanical energy.

A great many misunderstanding in the literature on and discussions of problems of the internal combustion engine seem to have risen from the fact that various authors and workers have not kept in mind the fundamental fact that the Carnot-Clausius law, usually known as the "Second Law of Thermodynamics," really applies only to cases where, in the cycle contemplated, no other change than a transfer of heat from a hotter to a colder body has taken place, and that it distinctly does not apply to changes of chemical structure or to changes of aggregate state of matter. Even if a gas is brought in contact with a source of heat and is expanding isothermically, it is perfectly correct to say, as the famous physicist Planck has demonstrated clearly in his lectures on thermodynamics, that the heat in this case is totally converted into mechanical work, as astounding as this proposition may sound to many students of thermodynamics who would be likely to lose sight of the fact that in this just contemplated process of expansion, besides the heat transfer another permanent change has taken place, namely the fact that the gas occupies a greater volume than before.

Combustion Processes

If, after this short digression, which is important for the correct understanding of the fundamentals of our problem, we return to the processes in the internal combustion engine, we shall realize that what is going on in the combustion chamber after ignition is unquestionably very different from the explosions on which we have exemplified. In the internal combustion automotive engine comparatively stable substances are simply burned without any appreciable increase in the total number of molecules of the fuel air mixture.

Those who are interested in these questions, of which any mention in the standard treatises on technical thermodynamics and internal combustion engines is wanting, I wish to refer to an interesting French publication which has just appeared under the title "Contribution a la Theorie des Moteurs a Combustion Interne," (Contribution to the Theory of Internal Combustion Engines) by M. Brutzkus, published by Gauthier-Villars et Cie, of Paris. One of the conclusions drawn in this work is that the fuel which burns with an increase in the number of molecules gives an apparently higher thermal efficiency than one which burns without any increase or with a decrease in the number of molecules.

Obviously, this property of the fuel is only one of the many factors determining its thermal efficiency and may be easily outweighed by others; it surely is not a feature which influences greatly the termal efficiency of present day gasoline. The present day internal combustion automotive engine using gasoline as a motor fuel is fundamentally not an explosion engine, but simply a heat engine, in which the heat of the combustion serves to expand the gases in a more or less approximately adiabatic line and to exert pressure on the piston. However, it is of utmost importance to keep this distinction in mind and to be aware of the fact that for fundamental theoretical reasons a combustion of motor fuel, no matter how rapid, can never lead to the tremendous, discontinuous, and sudden rise of pressure characteristics of the explosions mentioned above.

Increases of Pressure

On the other hand, such tremendous, discontinuous, and sudden increase of pressure are actually observed in the engine under certain conditions and are called "detonation," "knocking," "pinking," etc. This phenomenon, which some quite meritorious investigations of Mr. Midgley and others have proven to be entirely different from, although frequently coincident with, preignition and which can be counteracted by the addition of the so-called antiknock compounds to the fuel and in various other ways, has greatly puzzled the automotive engineers, although in my opinion, from a chemical standpoint, it is very simply and easily explained.

One of the reasons for this may be that practically all the handbooks on internal combustion engines use the words "explosion" and "explosion waves" in a rather indiscriminate manner and are singularly incomplete in presenting the chemical reactions which take place or may take place in the internal combustion engine. In all or any of such books, with practically no exception, you will find a more or less detailed discussion of the combustion with exhaust gas analysis showing it having been more or less complete and indicator cards showing its having been more or less rapid; you will also find some mention as to the dissociation of the products of combustion, namely, of carbon dioxide and of water, which mention usually culminates in the conclusion that at the temperatures prevailing in the internal combustion engine apparently only a very minimal percentage of the products of combustion could be dissociated.

Strange to say, one usually finds no mention whatsoever of the thermal decomposition and dissociation of the unburned fuel, although this phenomenon unquestionably must take place in the engine to a very great extent and offers incidentally, through the increase in the number of molecules accompanying it, a very simple explanation for the sudden, discontinuous, tremendous, localized rises of pressure which, just on account of being strictly localized and lasting probably only an infinitesimal length of time, cannot do any useful work, but are found to be simply more or less destructive impacts of the very nature observed during the so-called "detonation" of internal combustion engines.

In my opinion, as long as the wrong theory held by a great many prominent automobile engineers, namely, that detonation is caused by too rapid combustion, is not dropped and unless it is withdrawn from the mental equipment of our automotive engineers, it may seriously hamper the progress of the automotive industry because it will interfere with attempts of improving combustion which is a most desirable end.

The fact that certain subtsances added to the fuel have a tendency to counteract detonation, even if it should be proven that the very same substances slow up combustion, which to the best of my knoweldege, has not been proven at all, so far, would, in my opinion, neither prove nor even indicate that it is the rapid combustion which causes detonation, not because, but notwithstanding the fact that they slow up combustion. They might, for instance, quite well be conceived to be negative catalysts which slow up both the cobustion and the decomposition of the fuel, and their usefulness would then lies simply in the fact that they slow up the decomposition, the slowing up of the combustion being an incidental and rather undesirable side phenomenon, just the same as the usefulness of a heavy winter overcoat does not lie in the fact that it is heavy, but in the fact that it is a good heat insulator.

If this view, which would seem plausible from a chemical standpoint, is ac-

(Continued on Page 126)

EASTERN REFINED OIL MARKET UNCHANGED BUT LACKS FIRMNESS

By N. O. Fanning

NEW YORK, June 23. — There was no important change in the price structure of the eastern refined oil markets during the past week. Lubricating oils and wax continued to show a weak tendency due to further declines in crude oil prices. Gasoline prices held well throughout the territory. However, in no product was any great degree of firmness shown.

The weather seems to have turned definitely for the better, and if this proves so, consumption of gasoline and lubricants ought to show a considerable increase. This would, it is believed, have an extremely beneficial effect on prices. It is important, according to eastern refiners, that present gasoline quotations be held at least at their present levels if a loss on current stocks is to be averted, for as soon as consumption begins to show a decline, lower prices may be inevitable, unless present stocks are drawn upon more largely than now seems probable.

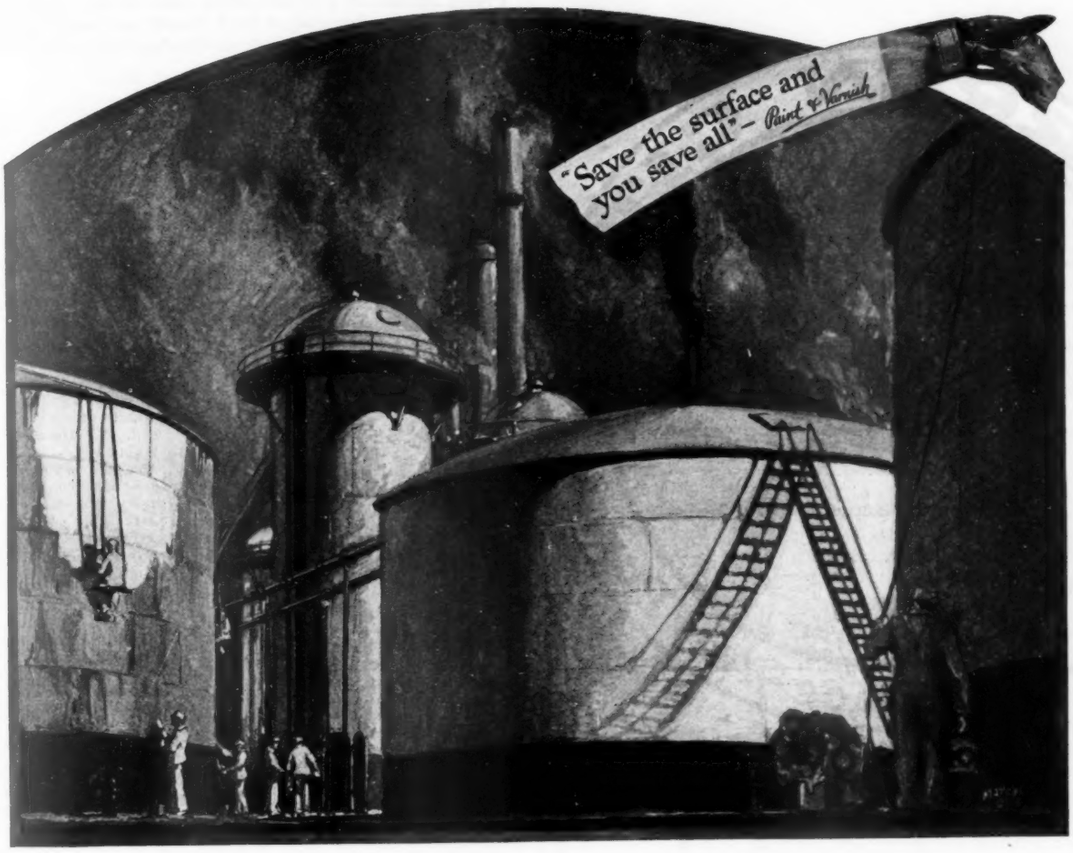
As far as New York City is concerned, the tank wagon price of 20 cents holds good, and service stations are getting either 23 or 24 cents per gallon. Weakness in the tank wagon market is reported at certain other points, such as Boston, where companies are cutting prices in order to get business.

Exports Slump

The past week was slow in the export market. Bulk exports of kerosene held up well, as a result of a large shipment to Germany and Holland. Movement of other products, however, fell off sharply. The following table gives exports from New York for the weeks specified:

	Week Ended		
	June 18	June 13	June 6
Gasoline:			
Bulk (Gals.)	2,199,259	1,282,686	3,124,935
Cases (No.)	.....	225,858	37,750
Kerosene:			
Bulk (Gals.)	3,212,784	1,531,796	7,868,035
Cases (No.)	1,300	187,529	170,327
Fuel Oil:			
Bulk (Gals.)	.....	2,937,886	.....
Gas Oil:			
Bulk (Gals.)	.....	289,225	.....
Benzine:			
Cases (No.)	.....	2,000	.....
Lubricating Oil:			
Bulk (Gals.)	1,121,143	1,021,893	1,494,859
Bbls. (No.)	14,770	6,621	6,054
Cases (No.)	12,055	15,299	32,408
Lubricating Grease:			
Bbls. (No.)	1,241	.....	.....

(Continued on Page 92)



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Color	Rise in Degrees Fahrenheit
Tin Plate	19.8
Aluminum Paint	20.5
White Paint	22.5
Light Cream Paint	23.0
Light Pink Paint	23.7
Light Blue Paint	24.3
Light Gray Paint	26.3
Light Green Paint	26.6
Red Iron Oxide Paint	29.7
Dark Prussian Blue Paint	36.7
Dark Chrome Green Paint	39.9
Black Paint	54.0

Effect of Color on Temperature and Rate of Volatilization of Naphtha in Metal Tanks

Color of tank—	Temperature of Naphtha, Degrees Fahr.	Percentage Loss of Naphtha by Volatilization
Black	111	9
Bright Red	109	8
Dark Red	108	8
Dark Green	108	8
Battleship Gray	106	6
Tan	104	5
Red Primer—White Top Coat	102	5
Cream	102	5
Pale Blue	102	5
White	100	4

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CHICAGO GASOLINE DEMAND INCREASED

Prices Advanced Three-fourths cent during week. Holiday Period of Three Days for July 4 Will Result in Considerable Consumption. Jobbers With Little in Storage Beginning to Stock Up

By John B. Waldo

CHICAGO, June 23.—Chicago has had a taste of real hot weather during the past week, and the oil men have been too much pleased by the result to make any complaint. All they ask now is that it will continue long enough to really make some inroads on the stocks.

One refiner's representative reported one of his customers who had been taking two cars a week increased it to three and then late last week asked if he increased the order to a car a day to continue indefinitely, if the refiner could take care of him. One large jobber in the Northwest was stated to have asked for prices on 20 odd cars for immediate delivery and when quoted replied that the price was too high. "Try it out," was the reply, "but if you have to pay my price the order is mine." The marketer says that he got not only the order for the 20 cars at his price but booked one at the same time for 25 more for July delivery and that the jobber told him that he wired 11 refiners and that nine replied that they were sold out for June, one replied that they could let him have 10 cars for immediate delivery at 9 cents and the other would take the order part for immediate and the remainder for early delivery at 9 cents. The jobber thought that with the Fourth of July coming and that it was a three-day holiday at least this year he had better cover his requirements. Another refiner's office stated that every customer on its contract list was now exceeding the requirements of contracts.

Not only are the jobbers having a greatly improved consumption but they are generally rather lightly stocked. There are some who have supplies of some size but the majority have been so sure that the tank wagon market would decline and that refinery prices would follow, who have seen each order placed at a lower figure than its immediate predecessor, if they were buying in the spot market, that they have forgotten about carrying any stocks and now that the market is higher they may rush to cover their wants. There must be at least 5,000 filling and bulk stations in the 10 States known as the Standard of Indiana territory and if each stored a month's supply it would make a large total, although many of the orders would not be large. Those who look on the present increase in the demand as temporary and due to the coming holiday as much as to any one thing, may be right, but we are right at the commencement of the season of the year when the consumption of gasoline is at its best and it would seem that whatever might happen to the crude or the refinery markets, there was bound to be a large consumption. Every favorable day sees a big demand from the motorists for gasoline and this consumption must be met.

Price Became Firmer

At the beginning of the week, there was some 8¼-cent gasoline obtainable by jobbers, but after Tuesday this disappeared and the market rose to 8½ cents. Later in the week this 8½-cent gasoline became more scarce and at the close of the week 9 cents was the general asking price with sales frequently made at that figure, although rather than lose business a few orders were taken at 8¾ cents.

Some of the refiners see 9½-cent gasoline for July and it does not seem unreasonable, if the demand holds. The cut price jobbers are in some cases ordering 56-58 gravity but the bulk of the business is now placed for the New Navy grade. The higher test gasoline is not selling largely but the bulk of the users of this grade are supplied on contracts. The prices seem too low as compared with Navy. Blends at around 8 cents have had to compete with Navy, which has been selling at 8¼, but with better prices for the Navy grade a better call may be had for the blends. Natural gasoline seems very dull and rather weak. "Way down some where" is the way one dealer stated the market.

Kerosene Market Good

Kerosene continues very good. The price remains practically 4¼ cents with a little shading at times, but the demand continues and supplies are not overly large to judge by the offerings. The demand is just about what it has been and runs along very nicely. During some of the days when there was so little doing in gasoline the kerosene sales were almost equal to the orders for the lighter product.

Demand for Distillate

There is a real rush for distillate for domestic burners. What is wanted is a contract over the winter, not the oil right now, and the quantities wanted are so large that the refiners are rather staggered and some of them are going to risk storing and distillate on their own account and waiting to see what the spot market will be from September forward. Several have contracted and Cosden & Co. has sold all that it will agree to run to Hughes & Co. The Roxana is also making contracts and the price is generally 3½ cents based on crude, a change of one-eighth for every 5 cents with a maximum and minimum price for the distillate.

The Standard is backward about announcing its plans but it is believed that it will concentrate more on the distillate of the gas oil type with an amber color, 35 to 38 gravity and a 170 flash. There are burners that work best on a 40-42 gravity with a 150 flash and the oil men's idea is to deliver kerosene and call it special name-of-the-burner oil for these. The sense of the industry here is that the burner that cannot use a heavy fuel oil is "out of luck." This does not mean a 22-24 or 24-26 gravity oil, but some degree of gravity that can be made by blending. The experienced oil men now blend the oil to fit the burner.

Fuel Oil Improved

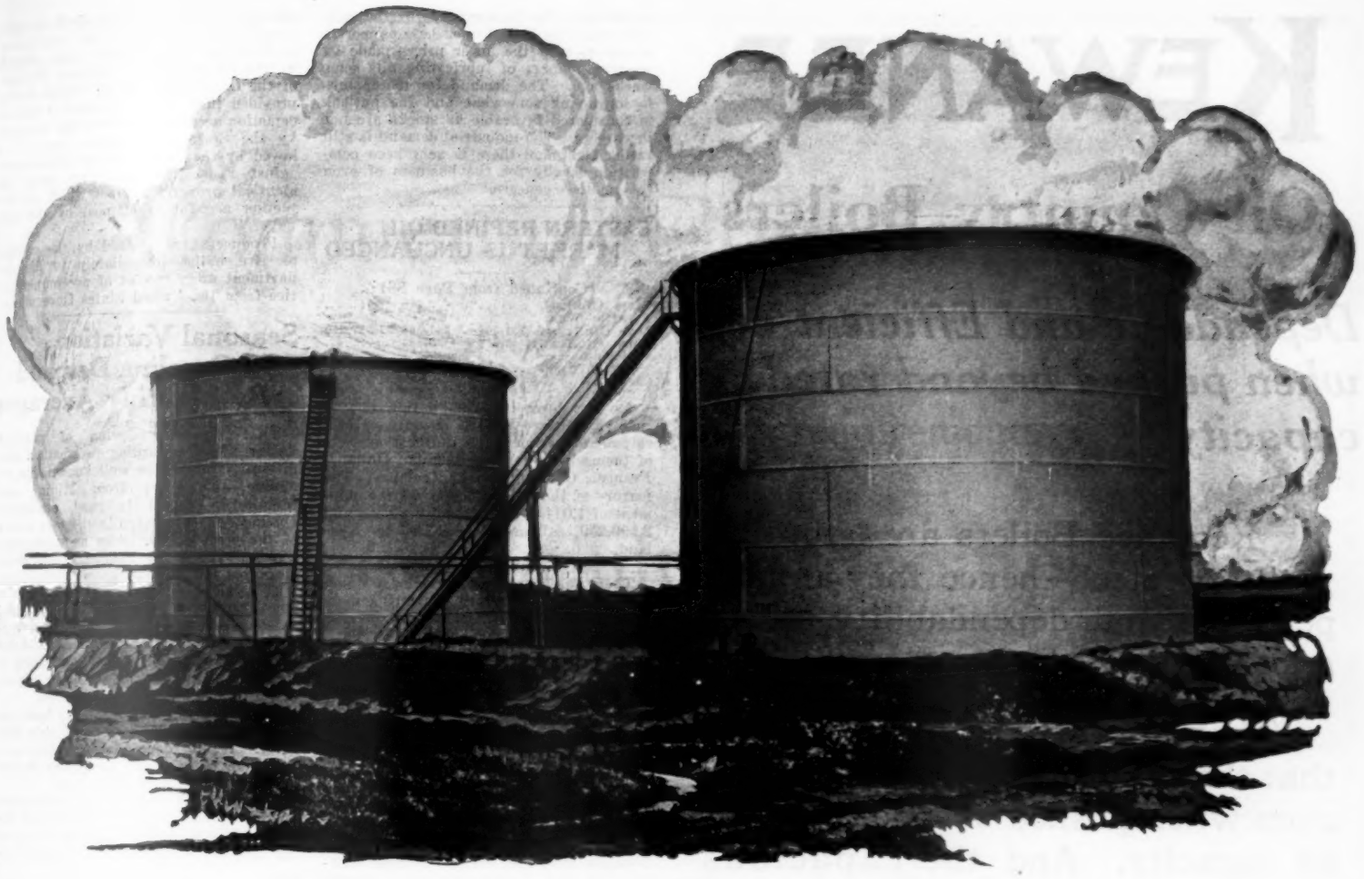
Fuel oil is doing a little better and the demand seems to be more stable and something larger. The industries are proceeding with great caution, but since Congress adjourned there has been more confidence. The chief trouble is that the farming communities are not buying as largely as they should and would if they could. The steel companies are operating at about three-fourths capacity and report many small orders. The automobile makers are generally running light, even Ford having cut his time to five days a week. One of the reasons for the reduced demand for fuel oil is the low prices for coal. That market is depressed badly by very large stocks and a light demand. The range of prices is narrow for the 24-26 fuel oil, 77½ to 80 cents. Quite a quantity of the heavier oil is being used and if the quantity of sulphur is not too high many prefer it. Some do not even object to the quantity of sulphur. The heavy oil with 1 per cent sulphur is selling in some cases as low as 65 cents.

Gas Oil Dull

Gas oil continues dull and not strong, although no change in prices is reported. There is very little contracting being done and some companies with contracts are not holding to them.

Deliveries of road oil on contract are beginning and the bulk of the spreading will be done during July and August when it is possible to get the farmers to help. Later it is expected that there will be some small business, but right now there is practically nothing doing. The 50-60 content is being offered at $1.10 to $1.15.

Lubricating oils are unchanged and not



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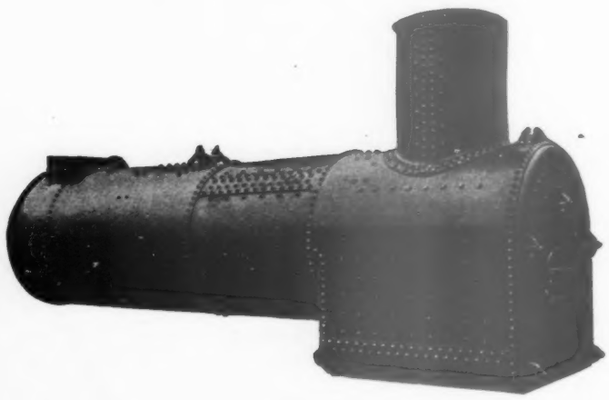

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so strong. The decline made by the eastern refiners is looked upon here as merely a reflection of the lower prices made by western refiners of lubricating oils some weeks ago. The demand for motor lubs is improving somewhat and the outlook is considered favorable as stocks are not increasing. The industrial demand is still rather light and there is very keen competition locally for the business of even the smallest concerns.

EASTERN REFINED OIL MARKET IS UNCHANGED

(Continued from Page 88)

Cases (No.)	.....	3,790	.....
Paraffin Wax:			
Lbs. (No.)	231,000	241,560	1,527,240
Bbls. (No.)	1,512	3,364	.....
Petroleum Coke (Tons)	.....	1,309	.....
Crude Oil Bbls.	993	7,512	4,174

As the foregoing compilation shows, case shipments fell off heavily. Bulk shipments, which made the best account of themselves, were to Belgium, Holland, France, Germany and England. The feature of the bulk exports was the shipment of 1,044,697 gallons of kerosene and 2,199,259 gallons of gasoline to England.

Oil Tanker Situation

There has been considerable of a slump in the oil tank steamer chartering market. Rates have fallen almost 50 per cent. The rate from Mexico to north Atlantic ports fell from 48 cents to 25 cents per barrel, and in other routes proportionately. The cause of this seems to be that most fixutres have been made ahead several months, and there is a lack of new business. It is yet too early to say that the slump in charter rates is due to falling off in traffic.

Oil receipts at Atlantic Coast ports during the week ended June 18 averaged 513,000 bbls. daily, of which 293,000 bbls. daily came from the Gulf Coast. Receipts from the Pacific averaged 126,000 bbls. and imports dropped to 94,000 bbls. daily. There has been a noticeable slump in imports over the last few weeks, while there has been a corresponding gain in receipts from Gulf Coast ports—particularly Baton Rouge.

The following table shows estimated daily average receipts of crude and refined oil at Atlantic Coast ports by water from the Gulf and Pacific Coasts of the United States, and imports, for the weeks ended June 18, June 13 and June 6, respectively; also monthly record since January 1, last (figures in barrels):

	Week Ended		
From:	June 18	June 13	June 6
Gulf Coast	293,000	312,000	298,000
Pacific Coast	126,000	177,000	126,000
Imports*	94,000	116,000	154,000
Total	513,000	605,000	578,000

Monthly Records (Daily Averages)

	Gulf	Pacific	Imports*	Total
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000
March	201,000	137,000	130,000	468,000
February	174,000	175,000	108,000	457,000
January	127,000	159,000	79,000	365,000

*Imports from Mexico, Trinidad and Peru.

OKLAHOMA INCOME TAX WAITS ON U. S. FIGURES

OKLAHOMA CITY, Okla., June 21.—Oil operators and royalty owners of Oklahoma have been advised by State Auditor C. C. Childers that their income tax returns will not be finally accepted by the auditor until acceptances are made by the Federal income tax collection bureau. The Oklahoma law provides, says Mr. Childers, that approval of depletion allowance by the State cannot be made until a report is rendered by the Federal Bureau.

The auditor is advised that the Federal Bureau is greatly behind in checking income tax reports from oil producers, which means that Oklahoma producers may not have to make payment to the State for several months.

The Oklahoma law provides that "a reasonable allowance for the exhaustion, wear and tear of physical property arising out of its use or employment in any business," may be allowed, "and in addition thereto a reasonable allowance in the case of mines, oil, gas and other mineral mining properties to cover depletion therein, which depletion shall be computed under the rules and regulations in force and from time to time adopted by the Department of Internal Revenue of the Government of the United States, provided that in no case shall a greater depletion account be allowed the taxpayer by the State of Oklahoma than is allowed by the United States Government against Federal income taxes upon the identical property against which the depletion account is claimed by the taxpayer."

Producers are advised by the auditor to give notice immediately to his department upon receipt of acceptance notice from the United States Government.

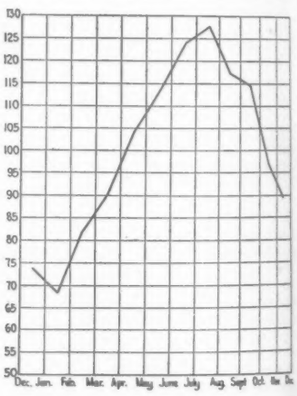
Seasonal Variation In Gasoline Demand By Monthly Averages

That the consumption of gasoline varies widely according to weather conditions, is of course well known, but an article and chart from Mining and Metallurgy shows it most strikingly. During August, generally the best month of the year, almost twice as much gasoline is used as in February, the worst month of the year.

It is not difficult to estimate the consumption for a year in advance, based on some continued rate of increase in consumption for past years but it is rather difficult, because of seasonal variation to form an opinion, from monthly figures, of the yearly rate of consumption.

The accompanying chart has been prepared by the author to meet this difficulty. It is a demand rather than consumption chart since the figures include exports as well as consumption.

The curve is expressed in percentages of the average monthly demand for the year. It was made by taking the average monthly consumption for each of the



years 1919 to 1923 inclusive as a standard and computing the percentage of demand in each month of the year against the standard for that particular year. The monthly percentages indicated on the curve, represent the average for a particular month over a five-year period.

The percentages, as expressed on the curve, as well as the cumulative percentages are as follows:

	Monthly	Cumulative
January	73.6	73.6
February	68.2	141.8
March	81.5	223.3
April	90.5	313.8
May	104.0	417.8
June	113.5	531.3
July	123.5	654.8
August	127.5	782.3
September	117.0	899.3
October	114.4	1013.7
November	96.8	1110.5
December	89.5	1200.0

By the use of figures for any individual month, one can test the average yearly rate of consumption and by the use of the cumulative percentages, increasingly more exact estimates can be made as the year progresses. It also seems possible that this cure or a similar curve might be of service in establishing a basis against which actual variations in performance can be plotted and some estimate made of actual loss in consumption resulting from unfavorable weather conditions.

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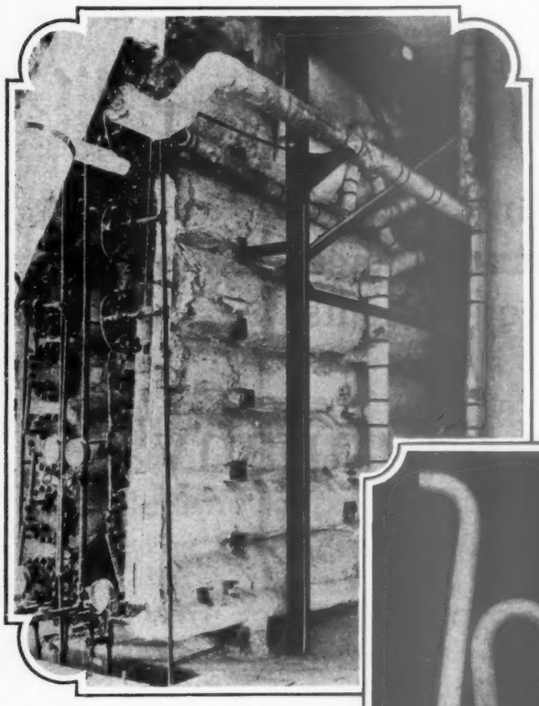
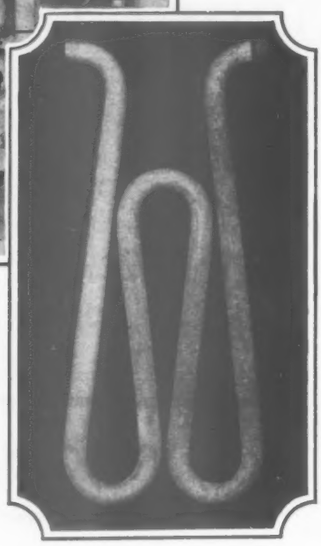


Below is shown one of the bends in the boiler plant equipment (furnished by Power Piping Co. and calorized by The Calorizing Co., Pittsburgh.)



—and Power Piping Co. Service

Here is a typical Power Piping Co. installation. The illustration shows a heat exchanger installed at the plant of the Great Southern Producing & Refining Company, Shreveport, La., the smaller reproduction being an example of the bends required for another phase of this same ob.

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CALIFORNIA FIELDS

(Continued from Page 38)

the two, is pumping 380 bbls. of 25.9 gravity oil from 3,724 feet. No. 12 was good for 475 bbls. a day of 24.8 gravity oil from 3,800 feet. The Shell was only successful in bringing in one new well. The company's completions was No. 2 Torrance, a 110-bbl. pumper at 3,510 feet. The oil is of a rather poor grade, testing 13.4 degrees and showing a cut of 7 per cent.

Long Beach

There were several fairly good wells finished and a few of smaller proportions put on production during the past week at Long Beach. The Pomona Oil Co., after redrilling and deepening well No. 1 from 3,710 to 4,450 feet, brought in the largest produced finished during the week and increased its daily production 1,030 bbls. The well, finished with a 3-inch liner, carrying 375 feet of perforated, is producing clean 25.8 gravity oil. W. R. Ramsey's No. 3-B Municipal was finished somewhat deeper and is listed as a 996-bbl. well from 5,824 feet. The oil, flowing through a ⅞-inch bean, under a pressure of 260 pounds, tests 23.6 degrees and shows a cut of 3 per cent. The Shell Oil Co. increased its list of producers by bringing in a new well, No. 14 Alamitos, and recompleting No. 3 Andrews. The former, a 960-bbl. producer, was drilled to 5,000 feet, but it was necessary to plug back to 4,877 feet to bring it in. The oil, however, which tests 26.5 degrees, has not yet cleaned up ond is still cutting about 15 per cent. Over 1,150 feet of 60-mesh screen casing was necessary to take care of the productive sand in this well. A ⅞-inch bean was used and a pressure of 110 pounds was built up on the tubing and 600 pounds on the casing. The company has passed No. 17 on this lease for a production test at 3,982 feet and if it has sufficient kick it should be on production next week. No. 3 Andrews was a pumper from 5,050 feet. It came in doing 195 bbls. of 24.1 gravity oil which cut 4 per cent. The well, however, was only a cleanout job and not a new producer. The Pan-American brought in No. 1 McKeon after drilling it to 4,996 feet and finishing it with a 6¼-inch oil string, including 750 feet of slotted pipe landed on bottom. The initial output, 790 bbls., tests 27.8 degrees and shows a cut of 5 per cent. The Belridge Oil Co.'s No. 1-A Britsch was good for 330 bbls. from 4,898 feet. The well, producing clean 22.8 gravity oil, was finished with a 4½-inch oil string. The General Petroleum is still having trouble with water in No. 2 Bixby and it is evident from the present production of 160 bbls. of 19.8 gravity oil, cutting 15 per cent, that the trouble has not yet been entirely overcome. This well was originally drilled to 4,500 feet and later plugged back to 4,418 feet. This lease is not very favorably located and it will probably be always more or less affected by water. The Petroleum Midway (California Petroleum) finished a 300-bbl. flowing well but the output showed a cut of 10 per cent. It is possible the cut may be substantially reduced after a week's flow. The company's new addition was No. 9 Fields, brought in from 4,600 feet. The oil, testing 21.6 degrees, is flowing through a ½-inch bean under a pressure of 625 pounds. The Union Oil Co. recompleted No. 2 Hart after redrilling and deepening it from 4,144 feet to 4,203 feet. The output, which was clean and tested 23.6 degrees, was, however, only 65 bbls. daily.

Dominguez

There were no wells actually put on production at Dominguez during the week but there are several nearing completion depths. The Shell Oil Co.'s No. 2 Reyes, finished last week, has been making a little less than 1,500 bbls. a day during the past week and, since the pressure has been rather stable, no big change is expected for some time. The Shell's next well will undoubtedly be of No. 4 Reyes, now drilling at 4,055 feet. The company struck a good looking sand in No. 1 Hellman at 5,241 feet and it setting a string of 8¼-inch. This showing is approximately 1,000 feet deeper than the sand picked up in the Union Oil Co.'s No. 3 Hellman, an offset about 600 feet away. The structure at this point seems to dip very fast.

The Shell is held up with a fishing job in No. 1 Childs, in the eastern part of the field, and no production test has been made. Material is being hauled in for No. 2. The Superior Oil Co.'s offset to this well, No. 1 Carpenter, is drilling ahead at 460 feet and will be carried down regardless of the outcome of the Shell's well to the west. The Associated Oil Co. has staked out a location for the first well on its 50-acre lease, about half a mile southeast of the Shell's No. 1 Childs. This property was secured several months ago, but drilling has been held up pending field developments. The General Petroleum Co. suspended drilling on No. 2 Gardena at 5,000 feet in the northern part of the field and no further work will be done unless field developments warrant it. The General Petroleum now has only one well drilling, No. 1 White, at 5,465 feet, which looks like a dry hole. No. 1 Austin was shut down at 5,402 feet and No. 2 at 1,072 feet. The Union Oil Co.'s No. 1 Gardena, due west of the General Petroleum Co.'s leases and the deepest hole in the field, is drilling ahead in a gray sand at 6,670 feet. No. 4 Callender, offsetting No. 1 Gardena, the General Petroleum's only producer in this field, has been cemented at 4,673 feet as the result of a slight showing. A core was taken in No. 2 Carson at 4,007 feet but, when it was negative, drilling was resumed and the hole is at present 4,035 feet deep. The Union is still experiencing casing trouble with No. 1 Hellman and it looks as though it will be several weeks before the condition can be remedied. Nos. 4 and 5, on the Hellman lease have been cemented, the former at 3,777 feet and the latter at 3,766 feet. The only other holes of interest are No. 1 Humphries, of the Birch Oil Co., at 2,723 feet, No. 4 Dominguez, of the Marland Oil Co., at 2,400 feet and No. 1 Dominguez, of the United Oil Co., at 3,245 feet.

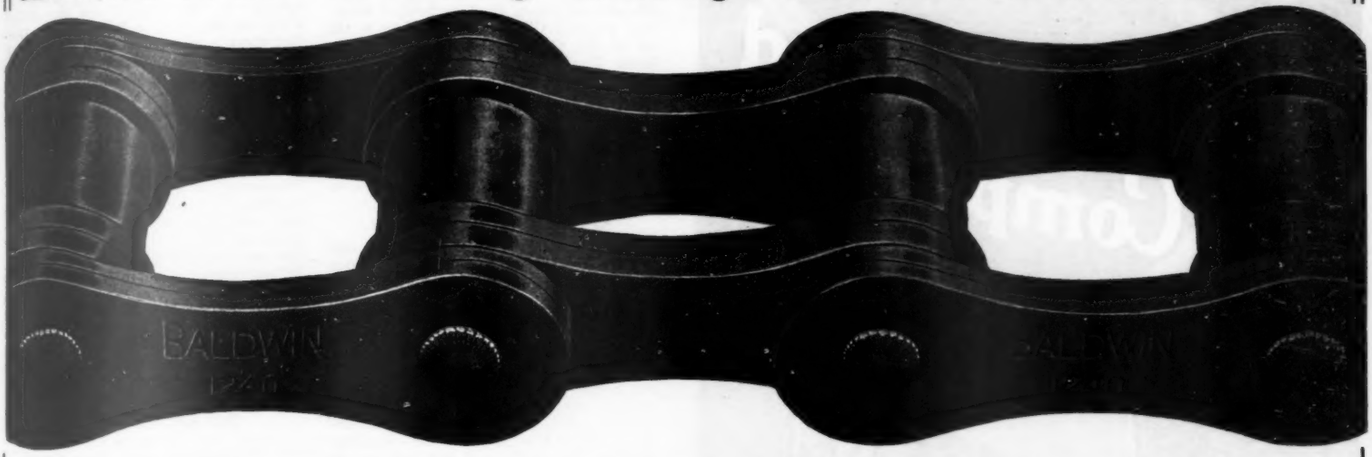
Rosecrans Area

In the Rosecrans area, the Union Oil Co.'s last cement job on No. 1 Rosecrans, did not effect a water shutoff, and it is reported that the company is contemplating pulling the 4½-inch set at 3,958 feet and drill ahead. The company's nearby wells, No. 1 Chandler, No. 1 Hursey, No. 1 Gray, No. 1 Paddleford and No. 1 Zinn are standing cemented around the 1,200-foot level and it would not be surprising if they were allowed to stand cemented pending further development. In the immediate vicinity of No. 1 Athens, 1 mile north of these wells, the company is erecting rigs for No. 1 Trust and No. 2 Atherns, but they will not be spudded in for at least two weeks. Superior Oil Co.'s No. 1 Maxwell, offsetting the Union's No. 1 Rosecrans, has not yet picked up any showings, notwithstanding 4,115 feet of hole has been made. Several cores, taken during the past few hundred feet of hole, have been negative. The U. S. Royalties was successful in fishing out the drill pipe lost in its hole at 3,865 feet and is cleaning out preparatory to resuming drilling. The St. Helens Petroleum is drilling ahead in No. 1 Rowan, at 3,455 feet, while the Standard Oil Co. is making hole in No. 1 Cowan at 2,300 feet. The Associated Oil Co. lost some drill pipe in No. 1 Brockley at 2,670 feet and as a result, No. 1 Higgins has passed it and is making hole at 2,722 feet in a hard sandy formation. Morrisons's No. 1 Swesey is drilling in a brown sandy shale at 3,700 feet, but neither this well nor the Sandburg Petroleum Co.'s No. 1 Steel at 2,116 feet is deep enough to pick up the pay. The Barnsdall Oil Co. cemented No. 1 Rosecrans at 1,066 feet and, while a location has been staked for No. 1 O'Dea, the rig has not yet been erected. C. C. Julian is the latest operator to enter the field and is erecting a rig just north of the Associated Oil Co.'s Brockley lease.

There was one new well finished in the

(Continued on Page 102)

Baldwin Heavy Duty Oil Well Chains



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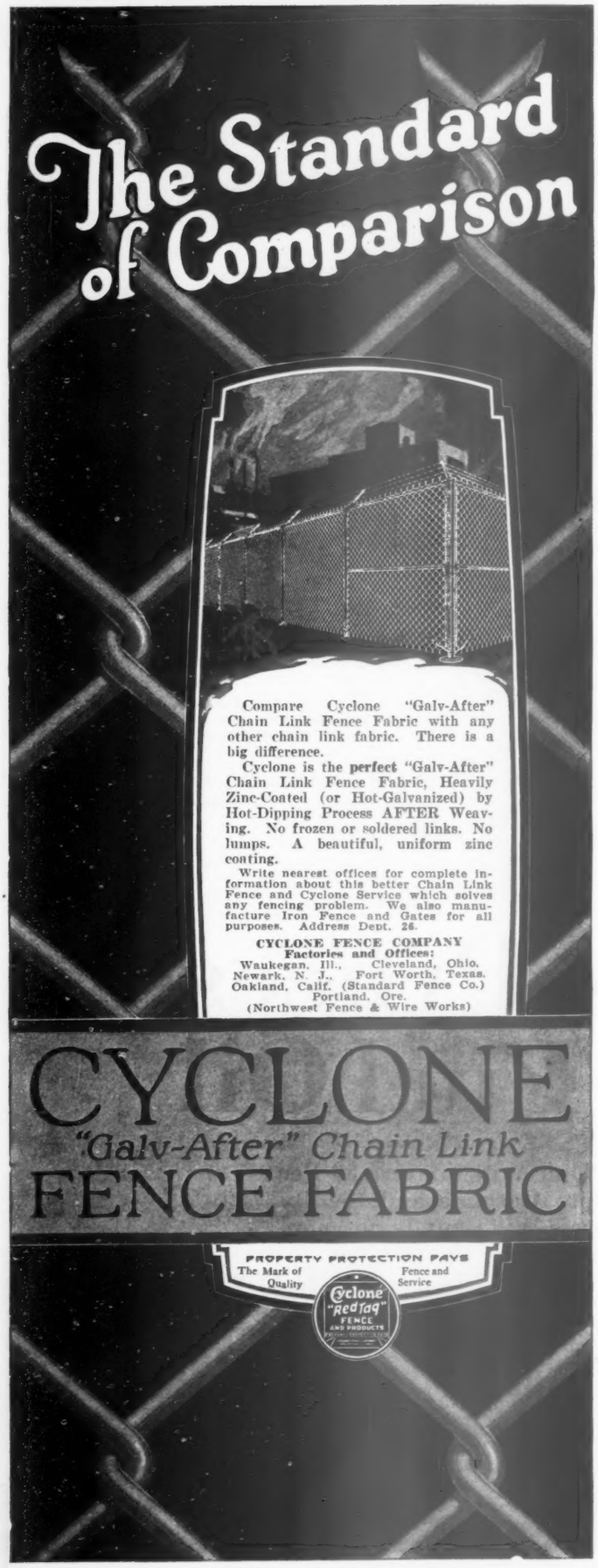
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EASTERN FIELDS

(Continued from Page 52)

Co. is drilling at 1,500 feet on the G. L. Snider farm. McCall & Co. are down the same depth on the George Hall farm. The Federal Oil & Gas Co. has a rig up on the G. F. Rohrbaugh farm. On Rush Run, Paw-Paw district, Marion County, Horner Brothers have a rig building on the Mary A. Moore farm. On Paw-Paw Creek, Paw-Paw district, the Owens Bottle & Machine Co. is building a rig on the Larnce Moore farm. In DeKalb district, Gilmer County, the Hope Natural Gas Co. has a rig completed on the Jemima Ward farm.

New Work in Ritchie County

Ritchie County is still leading in new work under way and starting. In Union district, the Hope Natural Gas Co. has the rig completed for a test on the Snow Bartlett farm. In the same district, the Carnegie Natural Gas Co. has a rig up on the John A. Hall farm. The same company has a rig completed on the Walter Somerville farm. On Hughes River, Murphy district, the Hope Natural Gas Co. started to drill on the N. J. Marshall farm. In Clay district, the Stephens Drilling Co. is down 1,100 feet on the Roscoe McCullough farm. This is 3,000 feet in advance of production. In Union district, John Locke & Co. started to drill on the N. S. Baker farm. In DeKalb district, Gilmer County, the Philadelphia Oil Oil Co. and the Hope Natural Gas Co. have rigs completed for tests on the F. A. Woodford and Louis Bennett farms. On Stone Pot Run, Grant district, Harrison County, the North Western Oil & Gas Co. has made a location on the Isadore Stout farm.

Doddridge and Marion Counties

In West Union district, Doddridge County, local parties have started to drill on the P. McKinney farm. The Clifton Oil & Gas Co. is hauling rig timbers to a location on the S. E. Smith farm. In Mannington district, Marion County, C. A. Snodgrass is drilling at 1,160 feet on the Caroline Toothman farm. S. N. Elliott is due in the Gordon sand on the L. A. Orndoff farm and hauling rig timbers to a location on the L. A. Metz farm. The Manufacturers Light & Heat Co. is making a road to a second location on the Peter McDevitt farm. In McClelland district, the Hope Natural Gas Co. started to drill on the Prudence Wright farm. In West Union district, the Philadelphia Oil Co. is rigging up on the Henry Hess farm. The same company is hauling rig timbers to a location on the Lewis Garrison farm. In Troy district, Gilmer County, the Star Oil & Gas Co. has rig timbers at a location on the S. B. Wiseman farm. In Collins Settlement district, Lewis County, Horner & Co. are hauling rig timbers to a location on Dyer heirs' farm.

In Elk district, Kanawha County, the Empire Petroleum Co. started to drill another test on the Squire Jarrett reservation. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has made locations on the J. N. Pyles and Hicks-Pipes farms and is hauling rig timbers to the M. A. Walton farm. In the same district, the Carnegie Natural Gas Co. started to drill on the C. E. Yeater farm. In Union district, the U. S. Stamping Co. is rigged up on the Philip and J. V. Markey farm. In Cameron district, the Cameron Gas & Electric Co. is drilling on the D. W. McConaughy farm. In Church district, Wetzel County, the Elms Gas Co. is due in the Gordon on the C. C. Rush farm. The Philadelphia is due in the same formation on the Hoge-Robinson farm.

Soutnwest Pennsylvania

In Gilmore Township, Greene County, the Peoples Natural Gas Co. completed in the Big Injun sand a test on the George Hennen farm. It is a fair gasser. In the same township, the same company has a gasser in the fifth sand at a test on the James Roberts farm. In Springhill Township, the Fips Drilling Co. got a gasser in the Gordon sand at a second test on the Peter Bradley farm. The Manufacturers Light & Heat Co.' test on the Garrison-Weimer farm in Aleppo Township is a gasser in the fifth sand, good for 1,000,000 feet a day.

Light Pumper and Gasser in Allegheny

In Robinson Township, Allegheny County, the Burkett Oil Co. has drilled a test on the Burkett farm into the Gordon stray sand and showing for a 2-bbl. pumper. In Moon Township, Mary Irwin, trustee, and others drilled a second test on the Irwin Estate into the top of the Gordon sand and developed a light gasser.

Deep Tests

On Chestnut Ridge, near Ligonier, Westmoreland County, the Peoples Natural Gas Co. completed welding the casing at its No. 2 on the Booth-Flinn property early in the week. It has now shut off the cave successfully and drilling again. It has reached a depth of 6,960 feet and expects to get the sand formation in which the first well got its gas in a week or 10 days. The same company's test on the Seger Brothers' farm is drilling at 6,787 feet and is below the depth at which it expected to get gas.

MEXICAN FIELDS

(Continued from Page 52)

in shell at 1,050 feet; No. 90, in the San Felipe at 1,250 feet; No. 91, in a shell at 1,041 feet; No. 92, cemented 8-inch at 4,500 feet in the San Felipe; No. 93, the same at 1,390 feet; No. 94, in white lime at 1,900 feet; No. 96, in gray shale at 820 feet; No. 98, in blue shale at 910 feet; No. 99, in shale at 90 feet; and Nos. 102, 103 and 104, rigging.

International Petroleum Co.'s Cacalilao operations are confined to Lots 4 and 5. The latest reports indicate progress as follows: No. 31, rigging; No. 56, re-rigging over a 1,595-foot hole, it being here that the rig burned some 10 days ago. Its No. 59 is bailing hole, having landed 6-inch on the bottom at 1,618 feet; No. 60 is drilling in gray shale at 730 feet; No. 61 is a derrick; No. 75, drilling in the San Felipe at 1,245 feet, with a showing of gas; No. 78, cemented 8-inch in the San Felipe at 1,200 feet; No. 79, skidding over from crooked hole lost at 560 feet; No. 80, spudding; No. 81, rigging; No. 88, drilling in pink shale at 80 feet; and some five more tests range from derricks up to rigged and ready.

Mexican Gulf Oil Co.'s No. 21, Lot 1 (4-C) is a derrick; No. 23, same, drilling in the San Felipe at 1,230 feet; No. 61, same lot, (4-A) which has been fishing for a drill stem in a hole 1,320 feet, reported bridged; No. 64, same lot (4-C) drilling in shale at 160 feet.

Mexican Sinclair Petroleum Corp.'s No. 33, Lot 1, (2-B) is drilling in gray lime at 1,675 feet; No. 46, Lot 2, drilling in blue shale at 350 feet. In Lot 3, its No. 68 is ready to spud; No. 69, rigging; No. 73, a derrick, and No. 91 cemented 10-inch at 1,175 feet in gray lime. Mexican Atlas Petroleum Corp.'s No. 1, Lot 1, is changing over to standard tools at 1,560 feet; No. 4, cemented 8-inch at 1,100 feet in the San Felipe. Mexican Eagle Oil Co.'s No. 17, Lot 1, (4-B) is drilling in brown lime at 1,740 feet; No. 20, same, drilling in the San Felipe at 1,245 feet; No. 21, drilling in gray shale at 640 feet. Rich Mex Oil Co.'s No. 48, Lot 1, is drilling in the San Felipe at 1,325 feet; No. 72, fishing again for a string of tools at 1,439 feet, and No. 93 is drilling in the San Felipe at 1,425 feet. There are some nine tests either inactive or wating for cement to set around casing. It is probable some will never be completed.

Transcontinental Petroleum Co.'s No. 7, Lot 4, is drilling in shale at 470 feet; No. 42, drilling in the San Felipe at 1,725 feet; No. 69, same, in the Tamasopa at 1,825 feet; No. 82, same, testing 10-inch at 1,300 feet; No. 86, same, running 10-inch at same depth; No. 90, in shale at 290 feet, and in Lot 4, also, derricks are up for three more tests. In Lot 5, No. 76 is drilling in the San Felipe at 1,345 feet; in Lot 2 No. 103 is rigging. In Lot 1 operations follow:

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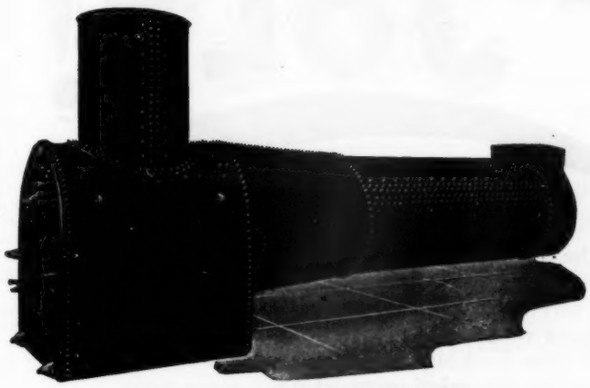

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No. 96, 400 feet in shale; No. 101, cemented 10-inch at 1,300 feet in the San Felipe, and No. 106, drilling at 1,120 feet in shale. In the Paciencia just north of Lot 1 Cacalilao, Transcontinental's No. 6 is making gas and showing over 200 bbls. at 1,710 feet in the San Felipe; No. 7 is running 12½-inch in shale at 875 feet.

Panuco Old Sectors

In the older sectors of the Panuco Field drilling operations follow: Crefiito Petrolero's No. 2, Lot 17 Lomas y Llanos, cementing 8-inch in limestone at 1,594 feet. La Corona Petroleum Co.'s No. 87 Salvasuchi is cementing 8-inch in lime at 1,247 feet; No. 88 Las Delicias, drilling in gray shale at 995 feet, and No. 89 La Polla, drilling in pink shale at 430 feet. English Oil Co.'s No. 4 Tampuche is rigging. East Coast Oil Co.'s No. 431 Ingenio is drilling in white lime and black shale at 1,855 feet; No. 213 Halcon, drilling in gray lime and showing 50 bbls. at 2,025 feet; No. 214, same, cementing 8-inch at 1,270 feet in a lime shell; No. 17 Potrero del Recreo, drilling in shale with traces of shell at 1,826 feet. National Railways cemented 8-inch at 1,249 feet in limestone in No. 10 Tanchicuin, (Federal zone). Panuco Boston Oil Co.'s No. 1, Lot 17 Lomas y Llanos, is drilling in shale at 1,225 feet. Trancontinental Petrolemu Co.'s No. 17 Barbarena is drilling in shale at 930 feet.

South Fields

In the South Fields drilling operations follow: Huasteca Petroleum Co.'s (Mexican Petroleum) No. 39 Cerro Azul, drilling in gray shale at 1,805 feet; No. 43, drilling in blue shale at 1,654 feet; No. 44, drilling in gray shale at 1,310 feet; No. 64, derrick. In Tierra Blanca, Huasteca is moving in for No. 24-A and No. 29, and is preparing to go back into Tres Hermanos for another try for the pay. La Corona Petroleum Co.'s No. 1 San Isidro is drilling in shale and sand rock at 2,730 feet; No. 4-A, Lot 31 Zacamixtle, cemented 10-inch in a shell at 1,135 feet. Cortez Oil Corp.'s No. 8 Aguada is drilling in the Chicontepec at 3,466 feet, the drill tapping quite a gas pocket at 3,463 feet. International Petroleum Co.'s No. 22-A Toteco is running 4½-inch at 3,400 feet, in the Chicontepec. This test is being drilled for the International by Sheldon & Burden, diamond drill contractors. It is alleged it is the deepest hole on record to be drilled with a diamond outfit using only a fish tail bit.

International's No. 46 Toteco is in hard shale at 1,816 feet. Mexican Sinclair Petroleum Corp.'s No. 13, Lot 176 Amatlan, cemented 8-inch in shale and lime shell at 1,950 feet. Penn Mex Fuel Co.'s No. 3 Jardin cemented 8-inch in hard shale with shell traces at 2,083 feet; No. 4, same, spudded in. Mexican Eagle Oil Co.'s No. 24 Los Naranjos, the deep test, has parted diamond drill rods at 4,308 feet, and is fishing. Its No. 34, same, is drilling in a shell at 628 feet; No. 36, in shale at 400 feet. In Horcones, No. 2 cemented 8-inch at 1,785 feet in a shale, while No. 26, Lot 226 Amatlan, is drilling in a sandy shale at 1,960 feet.

Ebano and Miscellaneous

In the Ebano Field, Mexican Petroleum Co.'s operations follow: No. 21 Chijol, fishing for bit in gray lime at 2,365 feet; No. 22, drilling in same formation at 1,830 feet. In La Dicha sector, No. 36, waiting for cement to set around 8-inch at 1,325 feet, shale and shell; No. 37, in blue shale at 710 feet; No. 38, in gray shale at 545 feet; No. 40, drilling in same formation at 1,155 feet, and No. 5 Las Margaritas, rigging.

At El Barco, Mexican Gulf Oil Co.'s No. 32 is drilling in gray lime at 1,055 feet; No. 37, cemented 10-inch in shale at 150 feet; No. 45, drilling in gray shale at 1,345 feet.

In the Toplia Field, Credito Petrolero's No. 4, Lot 6, Paciencia de Aguacate, is spudding. National Oil Co.'s No. 6, Lot 179, Quebrache is drilling around 2,900 feet in the San Felipe.

In the Marland Field, Cia. Pet. Franco Espanola's No. 8 Limon is running 8-inch at 2,155 feet in hard shale with some shell; No. 17 cemented 10-inch in shale at 1,083 feet; and to the southwest, in Guerrero, the same interests' No. 1 Rubio is drilling at 2,850 feet, presumably in gray shale.

At Caracol, just west of Tampico, Venable and others' No. 1, Lot 73, is drilling in shale at 1,610 feet, and derricks are up for tests on Lots 42 and 80.

At Los Esteros, in the State of Tamaulipas, American International Fuel Co.'s No. 11 is drilling in gray lime with a diamond drill at 3,091 feet.

In Neuvo Leon, Agwi Companies' No. 1 Popote is cementing 3-inch in gray lime at 1,028 feet.

Mexican Notes

Cias. del Agwi, (Atlantic Gulf Oil Corp.) has sold its production in the South Fields to Mexican Eagle Oil Co., Ltd. The run to Mexican Eagle will be effective the first of the coming month. This production is about 5,000 bbls. a day. Coincident with the Mexican Eagle's running of this oil, Agwi's sea loading terminal at Tecomate, in the jurisdiction of Port Lobos, will shut down indefinitely.

East Coast Oil Co. (Southern Pacific) is planning a careful "combing over" campaign in its Topila and Panuco holdings in the search for new production. Lee Stoner, who, for a number of years, has been chief engineer of the company, has had the additional duties of assistant general superintendent placed upon him, the title being a new one. Charles Laurence Baker, well known in Texas and California, has recently arrived here to be chief resident geologist for the company.

WEAKNESS IS EVIDENT IN COASTAL MARKET

HOUSTON, Texas, June 23.—Weakness is evident in every quarter of the spot market on zero cold test oils. Quotations are off in a few instances, when compared with last week. That no general reduction of prices on these oils has come about is due largely to the fact that independent refiners have the bulk of their output sold on contarcts, which are based on the crude oil market.

The future of the lubricant market in South Texas is dependent on the trend of the crude price structure. So far there is no evidence of any change on this as refiners of all classes are willing to take on grade A coastal crude at the market price and much of this oil is selling at a premium. For the past 18 months, refiners have been drawing on stocks of coastal crude. The supply is slowly growing less. Not more than 50,000 bbls. of grade A coastal oil is being produced daily.

The fuel oil market has competition from both North Texas and from Louisiana. Both districts are selling fuel oil low enough to permit shipping it to South Texas and offering it within quotations of the coastal zone. Under this condition some plants are running more of the residuum to gas oil, which has not suffered as has fuel oil but is lower than last week.

Both demand and movement are little changed from last week. Lubricating oils are moving steadily. Orders are small and quick shipments are requested. This class of buying indicates that jobbers understand conditions and are getting their supplies for short periods under the impression that a revision of quotations may come shortly.

Refiners of the Houston territory admit contracts are responsible for upholding the quotation structure on zero cold test oils and they believe it will take a reduction of the crude oil price to lower lubricants materially. Opinion is divided as to the future of the crude prices. While it is known that the whole crude price structure is weak, the situation of no surplus crude from the coastal fields is looked on as offsetting the general weak condition.

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You not only reduce cost of digging trench but you have fewer men to provide for plus the dependability of good machinery.

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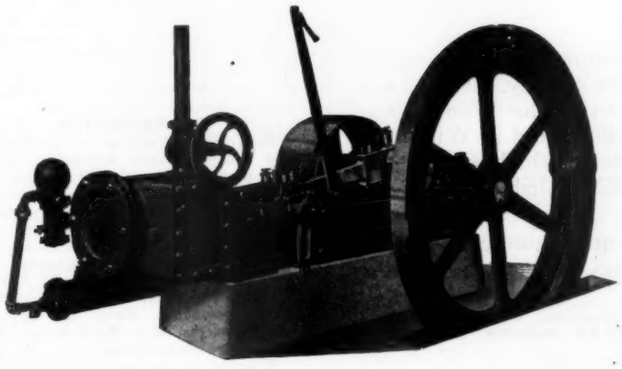

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Oil Production in Czecho Slovakia Is Comparatively Small

DUSSELDORF, Germany, June 14.—In Continental papers numerous articles are being published commenting the so-called "Egbell Affair" which relates to the most prominent of now-existing oil districts in Czecho-Slovakia, but very little has so far been said as to the real conditions under which the different oil fields of the country are producing. Considering the many uncontrolled rumors current on this subject the following concrete figures and statements certainly will be appreciable for any reader interested in the matter.

The actual daily output totals about 2.5 cisterns (one cistern is equal to 10 metric tons) and classified as follows:

Egbell district: In this district 190 holes have been drilled by the fiscal undertakings yielding at present only 2.25 cisterns a day in all.

Hodonin district: Here the Mahrische Bergbaugesellschaft m.b.H. is working on five wells with a daily output of 0.25 cisterns.

Ratiskovice district (adjacent to the Hodonin district): The only company to work is the "Opiag." Operations, however, have come to a standstill.

Mistrin near Gaya: "Koliner Raffinerie"—not at work at present.

Production Is Small

The foregoing clearly demonstrates the smallness of the output gained from the fiscal pits and that the activity of private undertakings, too, is comparatively insignificant. The reasons for this astonishing state are of different natures. The State's works at Gbely were received from the Hungarian State's Administration, after the revolution, with parts of their original staff. Personages, however, with leading capacity and engineers with good qualifications and initiative were then difficult to be obtained. The directors appointed were certainly capable men but in most cases coming from the coal and ore line without experiences in the oil industry. They were now put before the task of leading and increasing the existing plants. The geologists, also, had to go on very quickly in their work and had had little opportunity of acquiring sufficient practical experience, e.g. in other oil districts. The resulting uncertainty and unwholesome lack of accuracy was still increased after the time when the highest production was obtained, which was in July to September, 1922.

The oil deposits of the country have been at times largely supervalued and with such an effect upon the public opinion that it was then necessary in March, 1910, to issue the Naphtha Law.

The Naphtha Law

The great disadvantages of the Naphtha Law will be reported hereunder. It has been proved, however, that the question of supplying the necessary motor and steam power had largely been neglected by the responsible personages, and it is also stated that people were not too anxious to use first-class material only. The arrest of Director Bonska and the bookkeeper Paulik, with a number of other personages, shows the appalling lack of interest as to the successful management of undertakings.

Whereas production amounted to 240 cisterns in July, 1922, and 200 cisterns in September, 1922, it had fallen off to 65 cisterns in February, 1924. This is to be accounted for by the fact now assured that the whole district is perfectly watered. The monthly output during the last three years is represented as follows:

	Cisterns		
	1922	1923	1924
January	153	115	70
February	130	85	65
March	130	86	..
April	117	78	..
May	131	79	..
June	136	82	..
July	240	86	..
August	170	82	..
September	200	102	..
October	140	115	..
November	137	85	..
December	90	90	..
Total	1,774	1,090	..

On May 1 five employes and about 120 workmen of the State's works at Gbely were to be discharged. At the moment the Administartion is losing 300,000 cm.K. monthly.

On the other hand, the Naphtha Law has handicapped almost entirely the private activity in the oil fields. The two principal points of the Naphtha Law adversent to the private industry are as follows:

1. In the case that an oil find will be made which will apparently pay well, the Government has the right to claim the hole for property against payment of the costs.

2. No prospecting work will be allowed after April 9, 1923.

For this reason, the Mahrische Bergbaugesellschaft m.b.H. is working in the pit, whereas all other prospectors were forced to stop or at least to interrupt prospecting in the field.

The new Nahptha Law, which is to come, will endeavor to restrict or repeal the foregoing regulations, but the question is whether the private undertakers will follow the kind invitation.

DEMAND IN OHIO FOR NATURAL GAS GREATER

The constantly increasing demand for natural gas in Ohio is emphasized by annual reports of gas companies made to the Ohio Public Utilities Commission, showing there are now more than 1,000,000 natural gas consumers in the State.

The exact number of consumers on the first day of this year was 1,017,621, an increase of 38,690 over the year before. There was a big increase as well in the amount of gas consumed. A total of 137,523,699,473 feet of gas was distributed in the State, this being 3,498,169,560 feet more than the previous year.

Taxes to the amount of $4,711,302.97 were paid by the 109 companies in Ohio, which means that $12,957 was paid every day, Sunday and holidays, throughout the year in taxes. There was a decrease of five in the number of natural gas companies in the State during the last year.

To serve Ohioans with this valuable fuel requires an investment of $281,115,230.72 in wells, plants, buildings and distributing systems. Operating expenses of the companies increased $4,234,738.02, it costing a total of $65,565,432.29 to operate last year.

Fguring five persons to the average family, a total of more than 5,000,000 persons in Ohio are dependent on gas for cooking and heating purposes. Ohio has more natural gas consumers than any other State, almost a third of the total number of consumers in the United States living in this State.

GLAD TO PRINT TRUTH ABOUT GASOLINE SAYS NEWARK (N. J.) EDITOR

Sunday editors of the big metropolitan newspapers are constantly alert for feature articles of particular interest. When Kenneth D. Tooill, Sunday editor of the Newark (N. J.) Ledger, looked through "The Oil Industry's Answer" sent to leading newspapers throughout the country by The Oil and Gas Journal he recognized material for an interesting Sunday feature. After using it at length he wrote his appreciation as follows:

"It is one of the most intelligent and comprehensive article I have ever read, couched in language that will be understood by the average newspaper reader. In a word, it filled my every need and solved a big problem for me. My knowledge of gasoline is confined to the experience I have twice a week with an overalled bandit who fills my sieve-like tank."

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That this separator is giving satisfaction goes without saying. The oil is delivered into the stock tanks free from gas. The dry gas is being used for fuel.

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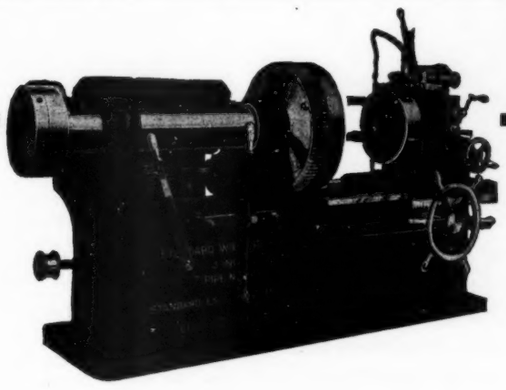

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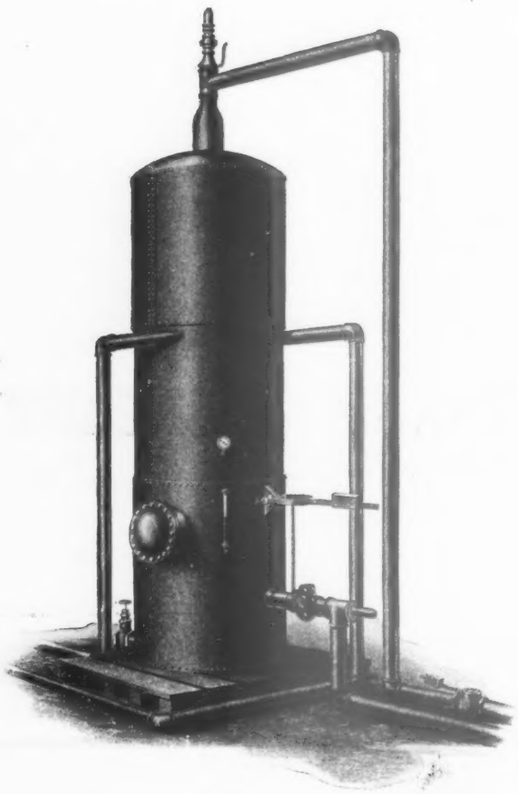

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Oil and gas conservation is an important item in the operating fields today and may be the difference between profit and loss in operating a small field.

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CALIFORNIA FIELDS

(Continued from Page 94)

Santa Fe Springs Field last week, but it was a rather unsatisfactory one. Anderson & Sweet took over the former Kirkpatrick Oil Syndicate's well No. 2, which has been standing idle for several months, and put it on production. It was originally drilled to 4,655 feet but Anderson & Sweet plugged it back to 4,100 feet. The casing was perforated between 3,700 feet and 3,800 feet to take care of the production from the Bell zone. It was put on the pump but the maximum output was 90 bbls. of 28.2 gravity oil which cut 6 per cent. Of the present production at Santa Fe Springs, 63,000 bbls, 19,000 bbls. are coming from the Bell zone and 43,000 bbls. from the Meyer zone. There are 65 wells producing from the former and 265 from the latter. Out of a total of 330, only 105 wells are flowing. Development work at Huntington Beach was devoid of anything particularly interesting. The General Petroleum has staked four locations and will begin drilling for shallow production probably within two or three weeks. Practically all the other major operators are engaged in redrilling and cleanout jobs.

Miscellaneous Drilling

There were no unusual developments in the Rideout Heights section of the Whittier Field, all of the operators with the exception of Montejo and Johnson showing satisfactory progress. The latter's No. 1 Clark is still involved in litigation and consequently, shut down. In the older section of the Whittier Field, the Central Oil Co. completed No. 73 at 1,890 feet and secured a 320-bbl. producer of clean 26.1 gravity oil. The success which the company had with No. 73 has resulted in a rig being erected for No. 74. None of the three test well being put down in the vicinity of Anaheim have picked up the pay and the Standard Oil Co.'s No. 1 Wagner, at 5,325 feet and the Superior's No. 1 Brookhurst at 4,500 feet, have been practically given up as dry. The Marland is redrilling No. 1 Anaheim at 2,882 feet, the bottom of the hole being 3,825 feet. The Shell Oil Co. picked up a nice showing in No. 1 Loomis, in the Bell area, a week or so ago, and set a string of pipe at 3,500 feet. A core was taken upon being drilled out, but it did not warrant a test and the bit is now going ahead at 3,597 feet.

The Oakridge Oil Co. will probably determine some time within two or three weeks whether its attempt to develop production at Bandini will prove successful. No. 1 Gage, at 4,478 feet and No. 1K. S., at 4,489 feet, should pick up the showing found in No. 1 Rossi at 4,700 feet, if it is present. In the Culver City area, the Associated Oil Co. is drilling ahead in No. 1 Caserini at 3,500 feet, while the Mohawk Oil & Gas has recemented No. 1 at 1,637 feet. C. C. Stahl has had several small showings in his Downey wildcat and, while none of them were large enough to require a production test, they are encouraging. A core at 4,297 feet carried a little oil and further tests will be made as soon as a water shutoff has been secured.

It is reported the Shell Oil Co. has been asked to take over the Fortuna Oil Co.'s test at El Segundo and carry it down another 500 feet. Drilling was discontinued at 4,560 feet because of financial difficulties. Unless the Shell can secure a good concession, it is not believed the company will go into the hole. The Pan-American's No. 1 Pacific Southwest, also in this area, is drilling ahead in a sandy shale at 4,100 feet. The Standard Oil Co. did not report any unusual developments in the Inglewood district and there is still some doubt as to what the company will be able to develop. The Associated Oil Co. has finished erecting a rig on the McNally Ranch at La Mirada, but it is not known just how soon the company will spud in. Several holes have been put down in the immediate neighborhood but all have been dry. The Petroleum Midway has not had any substantial showings in its No. 1 Neal at Norwalk and, since the hole is 4,780 feet deep, unless something develops shortly an abandonment will probably result.

Field Operations

There were 34 new wells started in California during the past week, according to the State Oil and Gas Supervisor, bringing the total for the current year to date to 741, compared with 717 at the same date last year. Of the 34 notices to drill filed during the past week 12 were for wells in the Torrance Field, four in the Long Beach Field, two at Dominguez, two in the Rosecrans district, one each at Montebello, Fullerton and Richfield, one in Ventura County and nine in the fields of Kern County. There were 42 tests for water shut off made, compared with 37 during the previous week. Deepening or redrilling jobs totaled 11 and abandonments seven. Permits were issued for the following new wells in proven areas:

Torrance

Location, Company, Well—
Fullerton Oil Co.—
16-4-14 Barlow 1.
23-4-14 R. S. McKeon 4.
Pan-American Pet. Co.—
24-4-14 Rinehart 1.
24-4-14 Andrews 1.
Petroleum Midway Co., Ltd.—
13-4-14 Logan 3.
Sentinel Oil Co.—
24-4-14 Joughin 10.
Shell Co.—
24-4-14 Bluemle 5.
24-4-14 Scarborough 6.
Standard Oil Co.—
19-4-13 Joughin 5.
24-4-14 Joughin 6.
15-4-14 Marble Fee 17.
Superior Oil Co.—
19-4-13 Torrance 38.
19-4-13 Torrance 19.

Long Beach

30-4-12 Dabney Oil Synd., Inc., 24.
29-4-12 Davis & MacMillan Co. 9.
Petroleum Midway Co., Ltd.—
19-4-12 Fields 7-A.
19-4-12 Davidson 5.

Rosecrans

Barnsdall Oil Co.—
20-3-13 Rosecrans 1.
General Pet. Corp.—
18-3-13 Vaughn 1.

Dominguez

Shell Co.—
34-3-13 Reyes 8.
Superior Oil Co.—
34-3-13 Carpenter 1.

Midway-Sunset-Elk Hills

4-11-23 Empire Gas & Fuel Co. 1.
34-12-24 Midway Oil Co. 191.
34-12-24 Midway Oil Co. 161.
8-32-24 Honolulu Cons. Oil Co. 12.
Pan-American Pet. Co.—
2-31-24 Crampton 11-F.
Standard Oil Co.—
10-11-23 Rass 1.

KANSAS FIELDS

(Continued from Page 30)

in their No. 1 Johnson, C SE SW NW, Section 20-33-3, in the Rainbow Bend Pool.

In the northern part of the County, Shawver & Sutter had 1,000 feet of oil in their No. 2 Newton, C SE NW NE, Section 15-30-4, from sand at 2,762-90 feet and were preparing to give it a shot.

In the Eastman district, C. W. Titus brought in his No. 1 Elliott, SW cor. SE SE, Section 31-30-6, making 15,000,000 feet of gas from sand at 2,827-51 feet, and 175 bbls. of oil at 2,851-54 feet. Wilson & Martin were drilling their No. 3 Eastman, NW cor. SW, Section 5-31-6, at 400 feet, and the Empire Gas & Fuel Co. had a rig up for its No. 3 Eastman, NE cor. SE, Section 6-31-6. The Southwestern Petroleum Co. was drilling at 1,100 feet in its No. 5, NE cor. Section 6-31-6.

East of Winfield, Murphy and others had a rig up for their No. 1 Bullock, NW cor. NE, Section 21-32-6.

East of Arkansas City, the Trees Oil Co. spudded and shut down No. 1 Warren, SW cor. NE, Section 10-35-5.

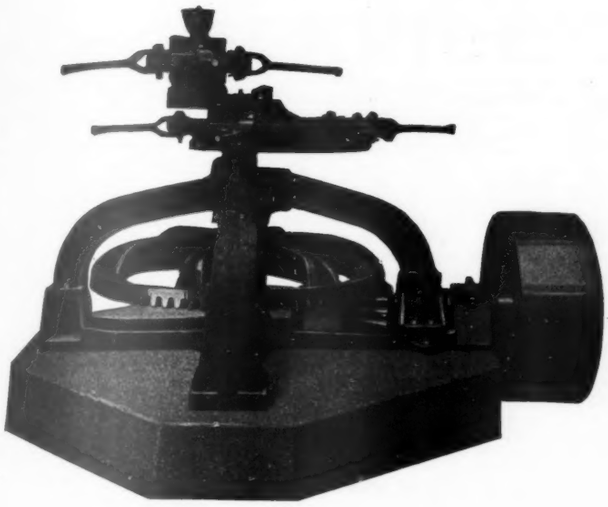
In Sumner County, the Alcorn Oil Co. abandoned its No. 1 Young, NE cor. NE, Section 33-32-2, as dry at 3,555 feet. The same company had a rig on the ground for its No. 1 Padgett, NW cor. SW, Section 23-34-2.

In southwestern Chautauqua County, T. B. Slick was drilling his No. 1, NW cor. Section 23-34-8, at 2,430 feet.

In northern Butler County, Roy Ramsey abandoned his No. 1 Hoy, SW cor. Section 16-23-6, as dry at 2,852 feet.

In western Greenwood County, Tom Miller and others abandoned the location for their No. 1 Kerr, SE cor. NW, Section 26-26-8, and were rigging up for a test in the NW cor. NE, same section, instead.

REID TYPE "S" PUMPING POWER



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The Reid Type "S" Eccentric and Disc Geared Pumping Power is intended for use on a number of wells which do not require as large a power as the two eccentric type and yet, due to their location, cannot be readily balanced on a one eccentric power. The addition of the disc to the eccentric permits better balancing of the wells, resulting in smoother operation with less strain on the machinery.

We do not recommend this power on installations requiring more than 15 HP as, with the exception of the added disc, this power is the same as our "R" one eccentric power.

Write for Bulletin No. 25

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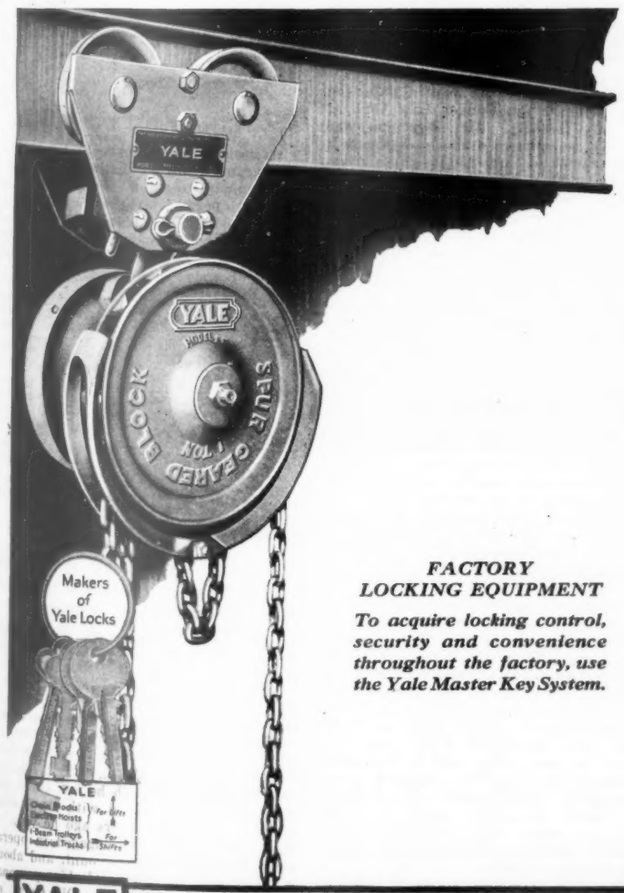

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WYOMING FIELDS

(Continued from page 36)

the overlay was too thick for trenching, a shallow drilling rig was brought in and four holes drilled to determine whether the structure is closed or not. The results are said to be very satisfactory and the Midwest is to drill a deep test to see if the structure is oil bearing.

In the northwest corner of Wyoming there is considerable activity starting up. Scouts and geologists are thick and the Oregon Basin in Park County is the mecca for most of the oil men, several wells have started already and more are being promoted. On Section 11-49-102, T. N. Clark of Pittsburgh, Pa., has a deep test started, the rig is up and the tools coming in. This well is to start with a 20-inch hole and will be drilled about 4,000 feet unless commercial production is found first. The Cody Oil & Gas Co. on the NW quarter of Section 21-53-101 has spudded in on a wildcat test on a new structure and the hole is at 180 feet and ready to hitch on the beam. On the NW quarter Setion 21-53-101, the Pittsburgh Southwestern Oil & Gas Co. has its well at 628 feet and is shut down for the present. The company is backed by Trees Brothers of Winfield, Kans.

Deepest Wyoming Well

The Producers & Refiners is now drilling the deepest well in Wyoming. This hole is located in the Simpson Ridge Field south of Medicine Bow in Carbon County and is now at 5,285 feet and in the shale somewhere above the Frontier sands. The hole is lost as to the formations and the drillers hope to pick up some identifying formation sortly. The Simpson Ridge operation was first opened by the Producers & Refiners last year when some shallow wells were drilled that found production at 700 feet. These shallow wells were the outcome of a deep test that started to the Frontier sand but found the oil in commercial quantities at the shallow depth.

Carroll G. Wegeman read a paper on geology before the Denver Law Club at that city recently. Mr. Wegeman was the first geologist to plane table the Salt Creek Field and outline its large area. He is now chief geologist of the Midwest though when first working in the Salt Creek Field he was with the Geological Survey. In Mr. Wegeman's paper he holds out little hope for oil in the Wall Creek sands that are found in Wyoming, but he describes the Dakota group and this is expected to carry what oil will be found in Colorado. Colorado does not have any of the black oil sands that are found in Wyoming and thus the former State cannot expect to discover any black oil fields.

Montana Operations

The Western Petroleum Exploration Co. completed its No. 4 Bruins in the Sunburst Field in Toole County, the only well completed in that field the past week. This location is on Section 9-35-2 and the well is a small producer after being shot in the Ellis sand at 1,453 feet. The Western Petroleum now has 12 producers out of 14 holes drilled.

The Murray Brothers' well on the Broadview Dome in Yellowstone County is drilling below the gas show reported a few weeks ago and the Dakota formation is expected in the near future. This well opened a flow of water about 1,800 feet that proved to be salt and adds another salt water area to the few met with in this region. Osage Field in Wyoming and the Byron Field have salt water in some wells and a few other instances are noted in scattered areas but usually water found in the wells of the Rocky Mountain region is fresh water no matter what the depth, though most of the water contains a large quantity of alkaline salts.

The suits involving the legality of the leases of the Big West Oil Co. in the Sunburst Field have all been settled and the firm is now preparing to drill its first well. This company was one of the first oil firms to enter the Sunburst Field after the discovery well of Campbell and others showed production. The Big West secured leases on about 1,000 acres that is considered some of the best in the field and then moved in a diamond drill outfit to comply with the leases which hold clauses that a well should be drilled within a specified time. The land owners were not satisfied with the diamond drill hole and sought to have the leases declared void. The resulting suits have tied up the property so that nothing has been done up to the present. The decision of the courts was that the diamond drill hole constituted a well in the legal sense.

Field Runs

The field runs from the Rocky Mountain fields fell off a small amount for the week ending June 21.

Salt Creek	85,500
Teapot	3,812
Big Muddy	3,351
Grass Creek	3,100
Elk Basin	1,250
Greybull	71
Mule Creek	940
Rock River	3,671
Lance Creek	1,351
Poison Spider	931
Osage	604
Hamilton Dome	900
Pilot Butte	71
Lander	635
Lost Soldier	5,135
Ferris	750
Cat Creek	4,542
Sunburst	4,200
Miscellaneous	525
Total	127,233

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California oil (crude and refined oils) at Atlantic and Gulf Coast ports for the week ended June 14 totaled 1,250,000 bbls., a daily average of 178,571 bbls., against 830,000 bbls., a daily average of 118,571 bbls. for the week ended June 7.

At Atlantic Coast Ports—	
Baltimore	260,000
Boston	72,000
New York	765,000
Philadelphia	130,000
Others	75,000
Total	1,250,000
Daily average	178,571

At Gulf Coast Ports, none.

According to figures collected by the American Petroleum Institute, imports of petorleum (crude and refined oils) at the principal ports for the week ended June 14 totaled 1,467,000 bbls., a daily average of 209,571 bbls., compared with 1,902,000 bbls., a daily average of 271,714 bbls. for the week ended June 7.

At Atlantic Coast Ports—	
Boston	196,000
New York	222,000
Others	213,000
Total	631,000
Daily average	90,143
At Gulf Coast Ports—	
Galveston district	280,000
New Orleans and Baton Rouge	362,000
Port Arthur and Sabine district	64,000
Tampa	60,000
Total	836,000
Daily average	119,429
At All U. S. Ports—	
Total	1,467,000
Daily average	209,571

DEATH OF DAVID LIVINGSTON

David Livingston, aged 28, of Tulsa and El Dorado, Ark., died at the Union Memorial hospital. at Baltimore, Mr. Friday after a lingering illness. He leaves surviving him his father, N. C. Livingston, and his mother, Mrs. Anna Livingston, also his brothers, J. K., Julius, Herman, Will and Carl Livingston and his sister, Mrs. Max Travis, all of Tulsa. Mr. Livingston was a director of the Livingston Oil Corp. and the Livingston Petroleum Corp., with headquarters in Tulsa, although he has not lately been actively connected with these companies. About two years ago he went to El Dorado, Ark., and engaged in operations on his personal account, and about a year ago incorporated his personal holdings into the Mazda Oil Corp. of which he was president.

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J. Everett Young Construction Service,

Denver, Colorado, March 19, 1924.

R. W. Moore & Company,
Denver,
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Attention: Mr. Atchison.

Gentlemen:

Replying to yours of the 15th, I wish to say that the Climax Engine has been very satisfactory, and as far as I am concerned, has settled a long debated question with most contractors as to the dependability of gasoline power. I am now thoroughly convinced that gasoline engines of the Climax type are the most dependable power that a contractor can use.

My Climax is, as you know, the power unit in my Link-Belt crawler crane. This crane has been in constant service for the past thirteen months on the severest possible work, dragline excavation. I have been careful in using nothing but the best lubricating oil in the engine, and have drained the oil once a week. It has never been necessary to add oil between fillings. It has never had to take up on engine bearing. I have never had to take up on engine bearing.

In other words, I am just as pleased with the Climax Engine as I am with the Link-Belt crane in general.

Very truly yours,
J. EVERETT YOUNG CONSTRUCTION SERVICE
J. Everett Young
By J. Everett Young

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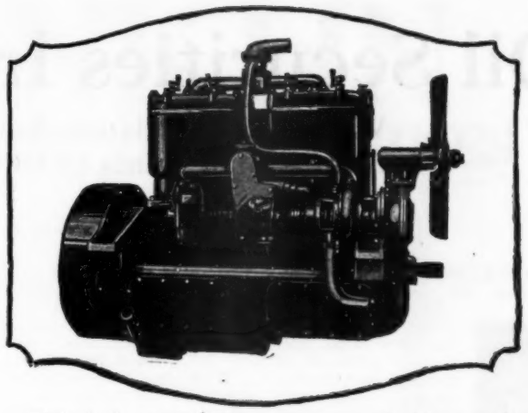
Link-Belt Crawler Crane manufactured by Link-Belt Co., Chicago, Ill. Operated by J. Everett Young Construction Service, Denver, Colo.



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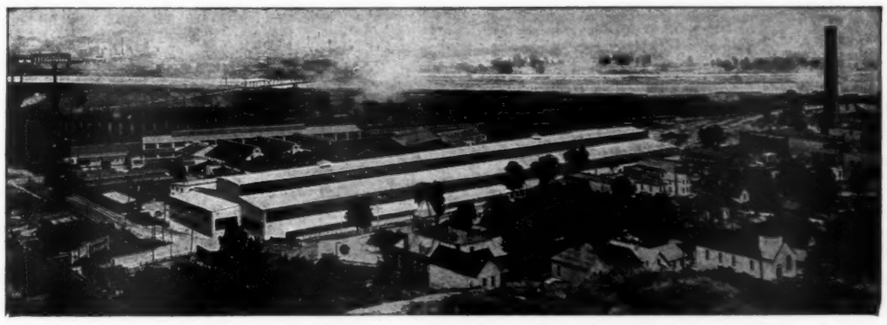

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Kansas City, U. S. A.

Tulsa, Okla. **Dallas, Texas** **Denver, Colo.**

Oil Securities Irregular and Inactive

Weakness in Atlantic Refining Co. Common Feature of Week. Annual Statements of Dutch Shell and Producers and Refiners

By N. O. Fanning
Room 525, No. 30 Church St., New York

NEW YORK, June 23.—Oil securities were irrgular and comparatively inactive during the past week. The feature of the oils was pronounced weakness in Atlantic Refining Co. common stock, which fell to 91, the lowest quotation at which it has sold since the declaration of 900 per cent stock dividend in 1922. The selling was attributed to forced liquidation, and not to any development connected with the company itself. The stock sold this year as high as 140½.

There was considerable quiet accumulation of such oil shares as Standard Oil of New Jersey, Shell Union Oil, Prairie Oil and Gas, International Petroleum, Ltd., California Petroleum, Standard Oil of California, General Asphalt and Pacific Oil. However, several other stocks were soft, including Cosden & Co., Royal Dutch and Anglo-American Oil.

Rights to subscribe to new Royal Dutch stock at the rate of one new share for every four shares held sold on the New York Stock Exchange at 6½, but later dropped below 6. Each "right" gives the owner the privilege of purchasing one new New York share at $13.50. The stock now sells on the exchange for about $47.

Position of Atlantic Refining

The report that Atlantic Refining might reduce or pass its common dividend next August, circulated around the street in connection with the decline in price of the shares, was not credited by those who have studied the position of the company.

In 1923 the company earned net $835,634, equivalent to $4.17 per share on the $20,000,000 preferred stock (par $100), or in other words did not fully earn the dividend on the 7 per cent preferred. The remainder of the preferred dividend, and the dividend on the common amounting to $2,000,000 were paid from surplus.

The fact that the company failed to earn its common dividend is explained by a drastic inventory readjustment, amounting to $2,233,930, an item not present in the three preceding years. There was a further drastic writing off for depreciation during 1923, amounting to $8,552,933. It is apparent that with any improvement in oil prices at all this year, the earnings of the company will show a considerable gain over those for 1923, with the common dividend easily covered.

Gross earnings of Atlantic Refining in 1923, amounting to $117,624,931, were the largest reported since 1920, indicating a gain in volume of business done. Cash on hand at the close of 1923 amounted to $2,241,677, more than double the figure for 1922 or 1921.

Losses were sustained by Atlantic Refining in Mexico, and it is also understood that efforts to develop crude production in the southwest have met with only partial success so far; on the other hand, Superior Oil Corp., in which Atlantic Refining has a substantial interest, increased its crude output from 1,000 to 3,000 bbls. daily since January. Atlantic Refining's two principal subsidiaries in the Mid-Continent are Atlantic Oil Producing Co. and Gulf Coast Oil Corp.

Atlantic Refining Co. has increased its marketing facilities in Pennsylvania and Delaware, where it handles 50 per cent of the business. It has also entered and is carrying on an aggressive campaign in Boston and vicinity. Its oil tanker fleet has been kept busy carrying crude from California, the Gulf Coast and Mexico to its refineries, and in the export and coastal marketing trade.

Royal Dutch-Shell

The feature of the annual statement of the Royal Dutch Co. is the huge crude oil production reported by that organization in 1923. It amounted to 103,000,000 bbls., or 282,000 bbls. daily. This is easily the biggest output of any oil organization in the world, and is about double that of the Standard Oil Co. of New Jersey.

The Dutch-Shell combine has a refining capacity considerably below its rate of production. Evidently, as the company is not selling its crude production, it must be storing considerable crude for future use. It is estimated that it added about 30,000,000 bbls. to storage in 1923, only a small part of which was in the United States.

With a large surplus of crude petroleum behind it, the basis is laid for considerable expansion of refining capacity and of marketing facilities. With crude oil production of the world above current requirements, the value of this surplus is not so evident, but at the least pinch, the Dutch-Shell combine will stand to benefit greatly by its large output of crude oil.

Incidentally, Shell Union Oil Corp., Dutch-Shell's American subsidiary, produced 13,426,000 bbls. of crude in the southwest in 1923, and 25,879,000 bbls. in California, a total of 39,305,000 bbls. This is about 38 per cent of the total world output of the Dutch-Shell combine.

The report of the Producers & Refiners Corp. (controlled by Prairie Oil & Gas) for 1923 shows net income of $2,819,256 after depreciation, interest and federal taxes, but before depletion, equivalent to 7 per cent earned on the $40,241,277 combined preferred and common stocks. This compares with $3,294,684, or 13.56 per cent on combined $24,066,750 common and preferred stocks in 1922.

The consolidated balance sheet of Producers & Refiners Corp. and subsidiaries as of December 31, 1923, compares as follows:

Assets	1923	1922
*Property, leaseholds, etc.	$51,474,692	$35,771,194
Stocks and bonds	.....	188,121
Investments	4,113,646	6,372,500
Marketable securities	190,862	.....
Cash	186,227	1,826,317
Accounts and notes receivable	2,398,463	2,962,194
Inventories	2,532,114	1,172,401
Advances to associate companies	7,706,259	.....
Deferred charges	1,459,009	523,231
Total	$70,061,272	$47,907,977
Liabilities		
Preferred stock	$ 2,845,350	$ 2,845,350
Common stock	37,395,927	21,221,400
Minority interest in subsidiary companies	865,328	.....
Purchase money obligations, etc.	1,194,764	953,251
First mortgage bonds	3,916,000	4,438,300
Notes payable	4,369,406	855,500
Accounts payable	2,531,743	1,944,122
Accrued interest, taxes and expenses	104,033	63,900
Reserve for Fed. taxes	217,929	383,117
†Surplus	16,620,792	16,062,431
Total	$70,061,792	$47,907,977

*After depreciation. †Subject to depletion.

At the annual meeting of Producers & Refiners Corp. in Cheyenne, June 30, stockholders will vote on reduction in directorate from 11 to 5 members.

Cities Service Company

Gross earnings of Cities Service Co. for the 12 months ending May 31, 1924, were $16,970,501, compared with $16,158,219 in the corresponding period of the preceding year. In the same 12 months net earnings amounted to $16,432,588, compared with $15,665,347, and net to common stock and reserves was $9,091,317 compared with $8,145,188. This was the equivalent of $19.67 a share earned on the average amount of common stock outstanding. In the 12 months ending May 31, 1923, $17.50 a share was earned on the common stock. In May gross earnings amounted to $1,855,491, compared with $1,589,994.

Westinghouse Stock Increase

The authorized capital stock of the Westinghouse Electric & Manufacturing Co. was increased from $125,000,000 par value to $200,000,000 par value at a meeting of the stockholders at East Pittsburgh, Pa. E. M. Herr, president of the company, said: "The condition of business in our industry is quite satisfactory, the decrease has not been of sufficient volume to materially affect our operations, and our commercial people believe it will improve in the fall." Directors were elected as follows: Term expiring June, 1928, Guy E. Tripp, chairman of the board, Westinghouse Electric & Manufacturing Co.; H. H. Westinghouse, chairman of the board, Westinghouse Airbrake Co.; Joseph W. Marsh, president, Standard Underground Cable Co., and Albert H. Wiggin, president, Chase National Bank of New York; term expiring 1925, H. P. Davis, vice-president, Westinghouse Electric & Manufacturing Co.; term expiring 1927, L. A. Osborne, vice-president, Westinghouse Electric & Manufacturing Co. Mr. Osborne and Mr. Davis were elected to fill vacancies created by the retiring of James C. Bennett and William H. Woodin.

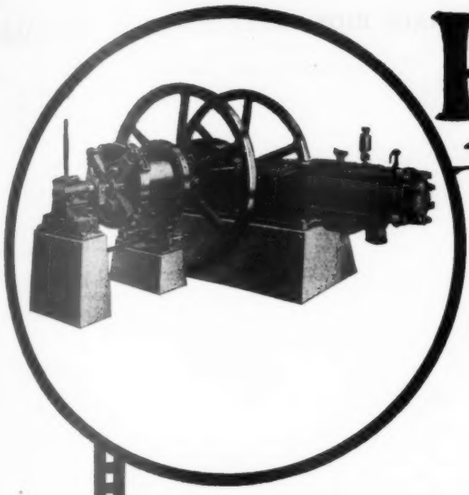
NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	‡Dividend Rate	Closing Quotations June 23	June 17	Range High	1924 Low
1.	American Republics	..	..	*35	*36	42	25
2.	Associated Oil	25	6	28½	29⅛	34⅝	27⅝
3.	Atlantic Refining, common	100	4	95	100	140½	84½
4.	Barnsdall "A"	25	..	17⅞	16¾	18⅞	14
5.	California Petroleum, common	25	7	21⅞	22⅝	29¼	21⅝
6.	Cosden & Co., common	..	..	26	26⅝	40½	23⅛
7.	General American Tank	..	†3	*41	*41	46¼	38¼
8.	General Asphalt	100	..	40⅛	39½	49	31⅝
9.	General Petroleum	25	8	40	40¼	41½	38⅝
10.	Houston Oil	100	..	67⅝	66½	82½	61
11.	Independent Oil & Gas	10	..	*7½	7⅝	9¾	6¾
12.	Indian Refining	10	..	6⅝	7	7	3¾
13.	Invincible Oil	50	..	12	12⅜	15⅞	11¾
14.	Maracaibo	..	..	27¼	28	37½	25¾
15.	Mariand	..	..	30½	30⅞	42	29
16.	Mexican Seaboard	..	..	20	20½	24⅛	14½
17.	Middle States Oil	10	..	2	2⅛	6⅞	2
18.	National Supply	50	6	59⅝	59	72½	56
19.	Pacific Oil	..	†2	47½	48⅜	58¼	45
20.	Pan-American, common	50	16	51	51⅜	61¼	44¼
21.	Panhandle Prod. & Ref.	..	..	*3	*2½	4½	2¼
22.	Phillips Petroleum	..	†2	34	34	42¼	32¾
23.	Producers & Refiners	50	..	25⅝	25¼	43½	22¾
24.	Pure Oil, common	25	6	21	51⅝	26⅝	20
25.	Royal Dutch, N. Y. sh.	13.40	2.62	47½	47⅝	59½	48
26.	Shell Transport	10	x92½	26	*35	41½	33
27.	Shell Union, common	..	†1	17⅝	17½	20¾	16¼
28.	Simms Petroleum	10	..	*14	13⅜	14⅞	10⅝
29.	Sinclair Consolidated, common	..	†2	18⅝	19¼	27½	18½
30.	Skelly Oil	25	..	19¼	19⅜	29	17⅜
31.	Standard of California	25	5	57	57¼	68½	55½
32.	Standard Oil of New Jersey	25	4	24½	35¼	42¼	33
33.	Standard of New Jersey, pfd	100	7	117⅜	*117	118⅝	115¾
34.	Superior Oil	..	..	6¼	6⅜	6⅝	2½
35.	The Texas Co.	25	12	38½	39½	46⅜	37⅜
36.	Texas & Pacific Coal & Oil	10	..	29⅞	9½	15¼	8¼
37.	Tide Water Oil	100	4	122⅝	*123	151	119
38.	Transcontinental	..	..	4⅝	4⅛	6¼	3⅜
39.	Union Tank, common	100	5	*99	*97	104	94
40.	White Eagle Oil & Refining	..	2¼	23⅝	23½	29⅜	23⅛
	Standard Oil Stocks						
41.	Anglo-American Oil	£1	25	15	15	18	14⅞
42.	Borne Scrymser	100	12	*217	*200	264	150
43.	Buckeye Pipe Line	50	14	61	61½	85½	60
44.	Cherebrough Mfg., common	25	10	49	49⅝	53⅜	29½
45.	Continental Oil	25	3	*39	*40	54⅞	42½
46.	Crescent Pipe Line	25	..	*13	*13	20	16
47.	Cumberland Pipe Line	100	10	128	126	144	109
48.	Eureka Pipe Line	100	8	*95½	*95⅝	105	95
49.	Galena-Signal, common	100	4	*56½	*56½	69⅝	55¼
50.	Humble Oil & Refining	25	4.8	35⅝	37	43⅝	36
51.	Illinois Pipe Line	100	12	*125	*127	161	131
52.	Imperial Oil, Ltd.	25	12	99⅝	101	119	99
53.	Indiana Pipe Line	50	16	*91	*90½	100	85
54.	International Petroleum Co.	100	x50	18	18	22½	16⅞
55.	Magnolia Petroleum Co.	100	4.5	*127	*127	160	124
56.	National Transit	12.50	16	21⅝	*21½	25⅞	21⅛
57.	New York Transit	100	10	69	70½	97	69
58.	Northern Pipe Line	100	6	*84	*82	107½	85
59.	Ohio Oil Co.	25	5	60⅞	61½	79½	60
60.	Penn-Mex. Fuel	25	..	32	32¼	45⅝	32½
61.	Prairie Oil & Gas	100	8	212	212½	269	204½
62.	Prairie Pipe Line	100	8	103½	103½	111	100
63.	Solar Refining Co.	100	15	*180	184	225	170
64.	Southern Pipe Line	100	16	94½	95	100	89½
65.	South Penn Oil	100	..	*130	133	176	130
66.	South West Pa. Line	100	8	85½	*85	89	80
67.	Standard of Indiana	25	10	56⅝	57⅜	58⅜	55⅜
68.	Standard of Kansas	25	8	41	40½	50½	38⅜
69.	Standard of Kentucky	25	16	105⅝	106½	120	102¼
70.	Standard of Nebraska	100	20	232	232	256½	198
71.	Standard Oil of New York	25	5.6	39½	39⅝	48	37⅝
72.	Standard of Ohio, common	100	10	283	286	236	277
73.	Swan & Finch	100	..	*41	*42	81	34
74.	Vacuum Oil	25	10	62	62⅛	69¼	56½
75.	Washington Oil	10	10	*27½	*27	29	25
	Miscellaneous Stocks						
76.	Cities Service, bankers shares	..	†21	*13	13½	16	13¼
77.	Gulf Oil Corp. of Pennsylvania	25	6	57⅞	58	65	56¾
78.	Mutual Oil	5	10	9⅞	9⅝	14	9⅝

*Bid, no sales. †In dollars. ‡The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

June 23	46.92	May 20	48.25	Apr. 15	50.13
June 17	47.63	May 13	48.24	Apr. 8	52.66
June 10	47.63	May 6	49.59	Apr. 1	51.74
June 2	48.88	Apr. 29	49.56	Mar. 25	51.82
May 27	49.01	Apr. 22	46.77	Mar. 18	51.53



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VALVELESS GAS ENGINES

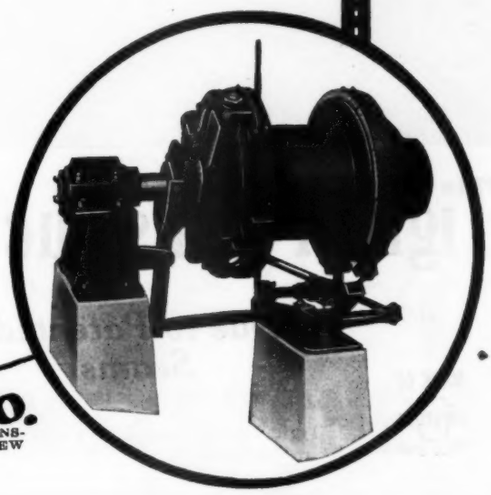
With a FRANKLIN on the job "pulling jobs," "Swabbing" and "finishing jobs" need no longer be a cause of much worry and cussing by you.

In the face of an overload to almost stalling the FRANKLIN will continue to pull and if the clutch is released it will "pick up" rather than stop.

Type "S" Reversible Clutches

Steady prolonged service and lower lubrication and repair bills are a few of the advantages that go along with the power and efficiency of the FRANKLIN.

If you want an engine that knows the real meaning of work investigate the FRANKLIN



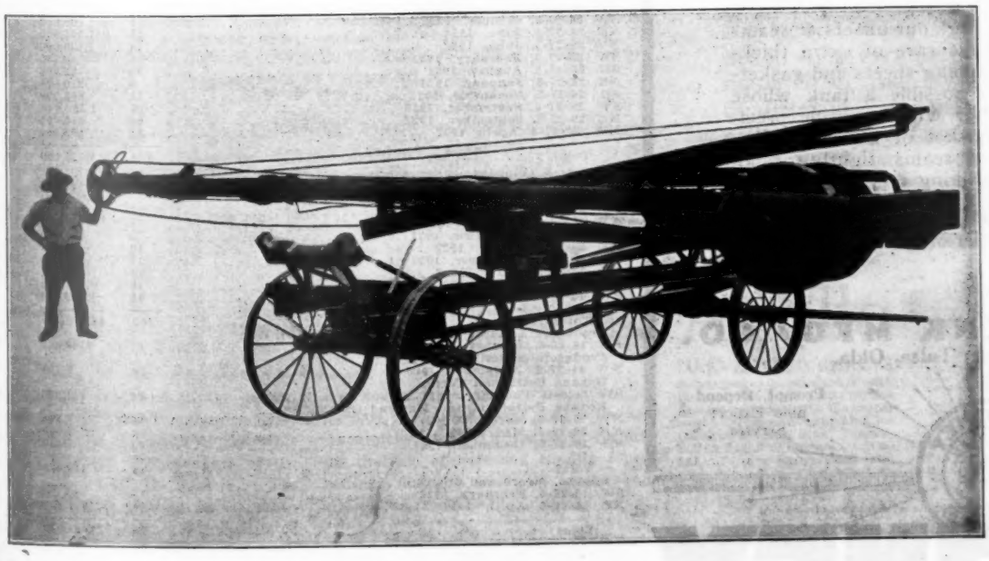
FRANKLIN VALVELESS ENGINE CO.

Franklin - Pa.

ATLAS SUPPLY COMPANY, MUSKOGEE, OKLA., and branches.
Also INTERNATIONAL SUPPLY COMPANY, TULSA, OKLA., and branches.

West Virginia by: NEW MARTINSVILLE SUPPLY COMPANY, NEW MARTINSVILLE, W. VA.

BUILT FOR YOUR JOB



Whatever your pulling problem is, be it intricate, peculiar or difficult, the IRON KING was built for that particular job. If you wish to put a well to producing in the least possible time, if you have an extra heavy load to carry, or have any of the many problems that are daily confronting an oil producer, the IRON KING will do that work and do it well.

One of the big independent operators of Pennsylvania who took the first IRON KING into that state more than seventeen years ago writes us as follows: "I use this machine almost constantly and would not buy any other as long as they are made."

If your oil well supply store will not get you an IRON KING write us direct. Also let us send you a catalog.

The IRON KING MANUFACTURING CO.

BRADNER, OHIO

Say you saw it in The Oil and Gas Journal

of the business. It has also entered and is carrying on an aggressive campaign in

June 13	49.01	May 6	June 18	51.74
June 8	48.88	Apr. 29	Mar. 26	51.82
May 27	49.01	Apr. 22	Mar. 18	51.53

created by the retiring of James [illegible] nett and William H. Woodin.

Tighter Construction

MADE OF KEYSTONE COPPER STEEL

Due to Patented Seams

Tight construction is the first requisite in an oil tank.

Investigation will prove to you that the MALONEY is the tightest in construction of all bolted tanks.

This is not an empty claim. The exceptional tightness of MALONEY design and construction is the direct result of our patented feature, which others are barred by law from imitating.

Our patent covers our offsets at seams and joints to take care of extra thicknesses of overlapping sheets and gasketing. It makes possible a tank whose parts fit together with scientific precision, so that gasket of uniform thickness packs the seams tightly at all points and no calking is necessary.

Our new folder gives full particulars about these superior tanks. Ask for a copy.

MALONEY TANK MFG. CO.

Offices and Plant: Tulsa, Okla.

12 to 3,000 Bbls. Inclusive

Prompt, Dependable Export Service

143

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY

FEW LARGE BIDS EXPECTED AT OSAGE SALE

(Continued from Page 24)

SW 16-26-6, June, 1923	10	385,000		340,313
SE 16-26-6, June, 1923	7	127,000		115,891
NE 22-27-5, June, 1923	16	1,026,000		1,018,229
Total	143	$2,704,400		7,184,634
Carter Oil Co. and Tidal Oil Co.:				
NW 17-26-6, November, 1922	6	$235,000		64,320
SW 31-27-6, February, 1921	16	7,100		670,022
SE 31-27-6, February, 1921	16	3,000		784,459
NE 33-27-6, August, 1922	1	160,000		5,001
Total	39	$405,100		1,524,742
Comar Oil Co.:				
NE 2-26-5, November, 1922	7	$410,000		175,340
Cosden Oil & Gas Co.:				
NE 6-26-6, November, 1921	16	310,000		574,470
NW 8-26-6, December, 1921	16	115,000		600,320
SW 8-26-6, April, 1922	15	300,000		274,375
NE 17-26-6, May, 1922	16	500,000		410,021
SE 17-26-6, June, 1923	6	11,000		132,420
SW 14-27-5, May, 1924	13	1,790,000		14,000
SE 14-27-5, May, 1924	11	1,955,000		60,370
Total	93	$4,981,000		1,963,537
Devonian Oil Co.:				
SW 5-26-6, April, 1921	16	$700		859,600
Gypsy Oil Co.:				
NW 5-26-6, May, 1921	16	900		856,672
NW 7-26-6, August, 1922	7	175,000		220,000
NW 24-27-5, March, 1923	16	1,310,000		2,444,203
SE 24-27-5, September, 1922	16	1,600,000		2,907,321
NW 19-27-6, March, 1923	15	1,100,000		1,048,203
SE 19-27-6, September, 1922	16	1,050,000		1,513,420
SW 28-27-6, June, 1922	9	230,000		207,322
NW 28-27-6, December, 1922	1	205,000		235
SE 28-27-6, August, 1922	1	61,000		9,245
NW 29-27-6, September, 1922	16	1,000,000		1,030,771
NE 31-27-6, January, 1921	16	1,300		1,452,121
NW 32-27-6, January, 1922	16	226,000		791,252
SW 32-27-6, October, 1921	16	305,000		886,670
NE 10-27-5, June, 1923	16	33,000		650,207
SE 22-27-5, June, 1923	12	670,000		600,577
NE 23-27-5, June, 1923	16	1,195,000		1,004,322
SE 3-27-5, May, 1924	4	151,000		6,344
Total	209	$9,363,200		14,646,462
Kewanee Oil & Gas Co.:				
NE 4-26-6, March, 1922	10	$205,000		344,472
SE 7-26-6, November, 1922	2	275,000		12,562
SE 18-27-6, May, 1924	9	285,000		6,032
Total	21	$765,000		363,556
Laurel Oil & Gas Co.:				
NW 1-26-5, May, 1921	16	$3,000		727,870
Gardner Petroleum Co. and Carter Oil Co.:				
SE 1-26-5, January, 1921	15	5,200		1,158,332
Gardner Petroleum Co. and Mariand Oil Co.:				
NE 12-26-5, September, 1922	5	325,000		131,359
Lorraine Petroleum Co.:				
SE 6-26-6, February, 1922	15	100,000		403,570
Midland Oil Co.:				
SE 13-27-5, April, 1924	13	1,580,000		41,886
NW 16-26-6, May, 1922	5	61,000		139,882
NW 14-27-5, May, 1924	12	1,990,000		28,700
Total	30	$3,631,000		199,470
Phillips Petroleum Co. and Delmar Oil Co.:				
SE 10-27-5, June, 1923	16	$41,000		1,467,662
Mid-Kansas Oil & Gas Co.:				
SE 35-27-5, October, 1922	13	665,000		411,971
SE 22-27-6, April, 1922	3	115,000		86,230
SE 15-27-5, June, 1923	16	1,325,000		996,704
NW 26-27-5, June, 1924	1	670,000		707
Total	33	$2,775,000		1,494,704
Phillips Petroleum Co.:				
NE 35-27-5, October, 1922	12	$495,000		211,671
NW 23-27-5, June, 1923	16	1,005,000		1,062,816
SW 11-27-5, May, 1924	13	1,765,000		196,319
Total	41	$3,265,000		1,469,201
Phillips Petroleum and Skelly Oil Co.:				
NE 7-26-6, May, 1922	7	$155,000		197,751
SE 23-27-5, April, 1923	14	1,101,000		945,363
NE 24-27-5, March, 1923	16	1,245,000		1,433,111
SW 24-27-5, October, 1922	16	1,005,000		1,932,255
NE 25-27-5, June, 1922	15	1,335,000		630,394
NW 25-27-5, June, 1922	14	1,160,000		757,455
SW 25-27-5, February, 1922	8	6,100		590,815
SE 25-27-5, August, 1921	13	52,000		940,994
NE 26-27-5, January, 1924	9	310,000		149,424
SE 26-27-5, November, 1923	11	805,000		230,564
SW 19-27-6, September, 1922	16	1,585,000		1,631,614
NE 29-27-6, September, 1922	11	600,000		597,974
NW 30-27-6, April, 1922	16	663,000		715,350
Total	166	$10,027,100		10,768,493
Peters & Oliphant:				
NW 17-27-6, October, 1923	1	$82,000		48,717
Prairie Oil & Gas Co.:				
NW 4-26-6, October, 1923	16	360,000		1,007,472
NW 10-26-6, October, 1921	6	200,000		403,511
SW 10-26-6, December, 1921	5	200,000		276,047
NE 30-27-6, March, 1922	16	700,000		841,560
SE 30-27-6, December, 1921	16	250,000		666,764
SE 32-27-6, March, 1922	16	800,000		1,019,071
SW 33-27-6, April, 1922	16	600,000		697,574
SW 13-27-5, May, 1924	13	1,825,000		43,945
Total	103	$4,935,000		4,963,661
Producers & Refiners Corp. and Mariand Oil Co.:				
NE 16-26-6, January, 1922	13	$136,000		306,117
Producers & Refiners Corp.:				
NW 31-27-6, November, 1920	16	2,100		1,343,001
Roxana Petroleum Corp.:				
SW 4-26-6, February, 1921	14	251,000		907,554
Roxana Petroleum and Mariand Oil Co.:				
NW 6-26-6, April, 1921	16	6,600		460,595
NE 36-27-5, May, 1920	14	2,000		1,361,402
SE 36-27-5, December, 1920	13	7,000		536,373
Total	43	$15,600		2,365,382
Simons, Moore and others:				
SW 1-26-5, February, 1922	13	$3,100		324,475
NE 5-26-6, April, 1921	16	800		1,132,031
Total	29	$3,900		1,456,506
Sinclair Oil & Gas Co.:				
NE 1-26-5, May, 1921	16	$5,800		647,206
NE 15-27-5, June, 1923	16	800,000		1,016,451
SW 36-27-5, October, 1921	17	1,500		1,176,470
NE 19-27-6, March, 1923	16	615,000		294,513
SW 20-27-6, March, 1923	16	415,000		439,915
SW 29-27-6, March, 1922	16	650,000		637,979
SE 29-27-6, June, 1922	16	410,000		942,804
NE 32-27-6, March, 1922	16	600,000		968,576
NW 33-27-6, June, 1922	16	300,000		441,901
Total	145	$3,797,300		6,766,972
Skelly Oil Co.:				
SW 23-27-5, June, 1923	15	$740,000		846,894

Tidal Osage Oil Co.:			
SE 4-26-6, October, 1921	11	95,000	469,020
SW 4-26-6, February, 1921	16	206,000	549,203
Total	27	$301,000	1,018,223
Tidal Osage and Carter Oil Co.:			
SW 30-27-6, August, 1921	16	$26,000	884,088
Twin State Oil Co.:			
NW 26-27-5, February, 1921	8	800	183,564
SW 18-27-6, May, 1924	11	605,000	27,755
Total	19	$605,800	211,319
Grand total	1,306	$49,692,400	65,380,097
Burbank Extension, Kay County			
Comar Oil Co.:			
S½ SW 4-27-5	1	.....	2,828
S½ SW¼ 10-27-5, May, 1923	8	.....	913,745
N½ SW 15-27-5, April, 1923	8	.....	719,308
S½ NE 21-27-5, April, 1923	1	.....	22,750
Total	18		1,658,631
Dye, Tomlinson and others:			
S½ SW 15-27-5, January, 1923	8	.....	665,798
Mid-Kansas Oil & Gas Co.:			
N½ NE 21-27-5, March, 1923	2	.....	41,944
N½ SE 9-27-5, May, 1923	8	.....	1,140,513
Total	10		1,182,457
Phillips Petroleum and Skelly Oil Co.:			
SE 16-27-5	6	.....	112,553
W½ NW 22-27-5, March, 1923	4	.....	199,311
E½ NW 22-27-5, May, 1923	8	.....	686,763
Total	18		998,627
Twin State Oil Co.:			
NW 15-27-5, April, 1923	14	.....	847,741
Carter Oil Co.:			
S½ SW 10-27-5, June, 1923	8	.....	1,201,358
SW NW 3-27-5, January, 1924	3	.....	49,084
Total	11		1,250,442
Conden Oil & Gas Co.:			
NW 10-27-5, May, 1923	16	.....	967,498
Gypsy Oil Co.:			
SE 4-27-5, May, 1923	16	.....	854,133
W½ 16-27-5, May, 1923	2	.....	87,374
Total	18		931,507
Phillips Petroleum Co.:			
N¼ NW & SE NW 3-27-5, May, 1924	2	.....	511
N½ NW & NE 9-27-5	19	.....	1,026,760
S½ SE 9-27-5, May, 1923	8	.....	843,074
W½ NE 16-27-5	2	.....	213,864
Total	31		2,084,209
Sinclair Oil & Gas Co.:			
E½ SW 9-27-5, May, 1923	5	.....	259,336
George S. Bole:			
E½ NW 4-27-5, August, 1923	2	.....	251,752
Laurel Oil & Gas Co.:			
N½ SW 4-27-5, August, 1923	2	.....	25,123
Prairie Oil & Gas Co.:			
S½ NW 9-27-5, January	4	.....	178,423
Pure Oil Co.:			
E½ NE 16-27-5, August, 1923	5	.....	163,177
Roxana Petroleum Corp.:			
NE 4-27-5, August, 1923	7	.....	229,467
The Texas Co.:			
SW 3-27-5, October, 1923	16	.....	366,065
Total Kay County	185		12,060,253
Grand total Burbank Field	1,491		77,440,350

BRITISH REPORT ON POLAND'S OIL IN 1923

The oil industry in Poland developed last year in a more satisfactory manner than in 1922, and showed an increase of about 114,000 tons, or 25 per cent, in the net production over the preceding year, says a British Department of Overseas Trade report just published. Equally satisfactory results were obtained both in the eastern and western districts with their shallow wells, and in the central district of Borysaw-Tustanowice-Mraznica, in spite of the depth of the wells and the fact that a large part of the Tustanowice Field is watered. The Mraznica Field is yielding large quantities of natural gas, which has facilitated the expansion of the gasoline industry. The drilling of new wells was carried out on all fields on a fairly large scale and with satisfactory results, but there was a falling off towards the end of the year on account of the steadily growing cost of drilling and materials.

Very little British capital found its way to the Galician oil fields. Negotiations for the acquisition of new properties in the shallow fields of Eastern and Western Galicia took place during the year and are still proceeding. The leasing of crown lands has been vested exclusively in the Ministry of Trade and Industry. The export tax on crude oil amounted to 150 marks per kilo net weight; it has now been increased to 10 gold centimes, or 180,000 marks at the present official rate of conversion. British goods required in this industry, the report says, are finding a better market since the increase in the cost of the local goods has taken place; there is above all an opening for the sale of wire and manilla ropes, belting, fittings, small-size steam and oil engines, tools, etc.

PRODUCTION OF CRUDE OIL
Metric Tons

Year—	Gross Production	Fuel Oil	Wastage	Net Production	Stocks end of Year
Drohobycz:					
1921	630,441	53,883	57,884	518,674	303,995
1922	628,288	56,748	130,292	441,248	150,000
1923	649,296	15,642	86,196	547,458	14,883
Jaslo:					
1921	50,754	5,834	624	44,296	8,937
1922	56,054	4,496	913	50,645	6,997
1923	56,280	1,608	1,172	53,500	4,390
Stanislawow:					
1921	23,875	381	207	23,287	4,008
1922	26,703	377	346	25,980	2,908
1923	31,622	221	315	31,086	4,550

Net Production

	1921	1922	1923
Drohobycz	518,674	441,248	547,458
Jaslo	44,296	50,645	53,500
Stanislawow	23,287	25,980	31,086
Total	586,257	517,873	632,044

Increase in 1923 over 1922, 114,171 metric tons.

HEADS OKLAHOMA SURVEY

OKLAHOMA CITY, Okla., June 23.—Dr. Charles M. Gould, for many years a professor of science in the University of Oklahoma, and later director of the Oklahoma Geological Survey, has been elected to the latter position by the University Regents and will take charge July 1.

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OKLAHOMA SHUTDOWN MOVEMENT FAILS TO CLOSE FLUSH WELLS

Oklahoma operators seem unable to control the flood of oil from the flush pools of the State, regardless of shutdown meetings called during the past week for the purpose of curbing the rapidly rising output which is menacing the market. Many of the larger operators feel that the efforts to shutdown operations have met with failure, while others, who admit that little has been accomplished in curtailing the flow of oil, profess to see good results from the meetings in stopping wildcat operations and drilling work in proven and semi-proven areas.

"We should stop kidding ourselves at once," said an executive of one of the largest companies. "We have been faced with a topheavy crude and gasoline stock situation for several weeks. The purchasing companies have labored manfully to prevent disaster to the price structure, but producers have shown little inclination to cooperate with them in curtailing production. We are getting too much oil and it looks like we would get a lot more. Lower prices seem unavoidable."

Representatives of the Cromwell operators at their meeting Saturday appointed H. N. Cole, of the Pure Oil Co., Harry Pouder, of Pouder & Pomeroy, and George Dye, of the Wilcox Oil & Gas Co. to confer with other operators relative to a restriction of the present flush production there and to secure a curtailment of the heavy drilling program. The meeting was adjourned until 10 a. m., Wednesday, June 25, at which time further action regarding the shutdown program in the Cromwell Field and the State was promised.

Absence of Joseph I. Cromwell, discoverer of the Cromwell Field, and one of the major operators there, was given as the outstanding reason for the lack of action at the meeting Saturday. It was reported that Mr. Cromwell was negotiating for the sale of his properties to a Standard subsidiary and that the deal was then pending. For this reason, it is said, he was unable to take action regarding the shutdown as it affected his properties. It was freely voiced by some producers in that pool that the purchaser of the Cromwell properties would confer with the other operators following completion of the sale.

Another factor was injected into the Cromwell shutdown movement which may prove troublesome in securing united action in curtailing production and drilling there. Several of the smaller operators have finished good wells, some of which are the best that they have ever completed. These men do not feel inclined to risk permanent damage and possible loss of all production as a result of a shutin of their wells. They feel that their risk would be far in excess of the major producers who have good production in other fields. Dissention concerning a restriction of crude output in that field was attributable largely to this reason.

On the other hand several Cromwell producers do not feel that they should shut in their wells if the producers of Tonkawa and Stroud areas are permitted to go ahead with a large drilling program and sell the output from their wells which are allowed to flow unhampered.

In a statement to The Oil and Gas Journal, Mr. Cromwell said his position on the curtailment movement was made clear in a telegram he sent last week to the chairman of the shutdown committee. That telegram read: "I will be glad to join you in curtailing further drilling wells in our field in 10-8 except the completion of all necessary offsets to present producing wells but I cannot consent under any condition to close the gates on producing wells. I consider this best for all operations concerned."

Operators in the Ardmore district took action on the overproduction of crude oil in the State Thursday by drawing up a resolution outlining their policy on curtailment and calling on other producers in the State and the Mid-Continent to refrain from unnecessary operations.

The resolution read in part as follows:

Be is resolved by the undersigned oil producers in southern Oklahoma, that all unnecessary drilling for oil should be stopped; that a shutdown of all operations looking to the bringing in of new production should be brought about immediately and that only such wells as may be necessary to prevent forfeiture of leases and the offsets to wells already producing should be drilled.

We call upon all producers of oil in the Mid-Continent Field to join us in this movement to prevent injury and damage to the industry instead of continuing head-long to bring about overproduction and thereby bring about a great waste of one of the Nation's most needed and most valuable natural resources. In other words "Let us lock the barn before the horse is stolen instead of afterwards."

Operators who have to date signed the resolution include the following: Wirt Franklin, Simpson-Fell Oil Co., F. W. Merrick, Redoak Oil Trust, Graham Mineral Trust, Hilltop Oil Trust, Kirk Oil Co., Schermerhorn-Young Co., J. B. Schermerhorn, Lloyd Noble, Cameron Refining Co., Edward Galt, Roy M. Johnson, S. A. Apple, E. Dunlap, Sykes-Heenan-Coe, Sutherland Petroleum Co., L. S. Dolman, Jake L. Hamon, Jr., Gates Oil Co., Humble Oil & Refining Co., Fitzgerald-Hinkle-Westheimer, Westheimer-Daube, D. C. Fitzgerald, Simon Westheimer, Love-Thurmond, J. H. Hivick, C. R. Smith and the Cottonbelt Petroleum Co. Other operators whose names do not appear in the above list, are now signing the resolution at their first opportunity.

Operators in the Okmulgee district, as reported in the last issue of The Oil and Gas Journal, passed a similar resolution "calling upon all producers of the Mid-Continent Field to suspend the drilling of every unnecessary well," which further states, "we call upon those producers in the large flush pools to at once get together on some plan of curtailment in order that production may not rise to the point where the facilities of the industry will not be able to handle it."

Failure of T. B. Slick and the Pennok Oil Co. to agree to shut in their deep sand producing wells in the Tonkawa Field is expected to wreck any production curtailment hopes that may have been advocated for this area. Operators offsetting these producers declare that they must complete their wells or their competitors will drain oil from their acreage.

OIL CITY OPTIMISTIC ON GASOLINE SALES

OIL CITY, Pa., June 22.—Cylinder stocks and neutrals are bearing the brunt of the reduction in the price of Pennsylvania crude oil. They have gone down radically during the week both in point of demand and prices. Business conditions are said to be the cause for their decline.

Refiners and marketers are more optimistic concerning gasoline than they have been for some time. A real hot wave has hit the East with temperatures as high as 97 in Oil City. Only one relief from the heat seems to be available and that is automobile trips..

Service station proprietors in the Oil City district claim their gasoline and motor oil sales during the past few days have been double what they were on the corresponding days of last week. Immediately following the crude cut there was considerable uncertainty concerning the gasoline situation. The jobbers held off from the market expecting lower prices. When these did not materialize and when they found their trade suddenly increased at a tremendous rate, they were forced into the market which has been fairly active during the past few days. Some of the refiners are cutting heavily into their storage.

Kerosene is moving good, although at low prices. There do not seem to be any great stocks of it at hand at refineries in this district. Only one refinery in this city one day this week had any 46 available for immediate shipment.

Fuel oil is soft although the market is being maintained for it. There is not a great deal of it moving but some of the refiners are optimistic concerning it claiming that if the present gasoline demand continues it will not be long before cracking plants are again started with a much greater use for fuel oil.

NORTH TEXAS MARKET DEMAND AND PRICE UP

FORT WORTH, Tex., June 23.—For the first time in weeks, a real bull market on all refined crude oil products prevailed in the North Texas district. A fair demand with numerous inquiries has ruled for some time, but buyers in most instances refused to pay the quoted prices and sales dragged. This week the demand increased and an upward trend in prices followed with numerous sales reported at an increase over last week's quotations. New Navy gasoline is showing most strength, with prospective buyers asking for prices on large orders, several sales have been closed at higher acceptances than were quoted last week. Fuel oil hopped up 5 to 7½ cents a barrel, with gas oils in demand and none for sale. One marketing agency turned down an order for 30 cars, being unable to obtain the product at the prevailing price.

Quotations and sales on New Navy gasoline, centered right at 9 cents a gallon. Some orders filled at 8¾ cents were placed early in the week, but a strong week-end demand boosted the price a quarter of a cent and few sales were being closed at less than 9 cents.

There was just a fair demand for the higher grades of gasoline, though buyers for export are flirting with sales managers, and some large orders are expected to be placed the first of the week. Prices have increased ¼ to ½ cent since last quotations, with 64-66 375 end point, firm at 10½ to 10¾ cents a gallon.

Kerosene is strong with an increase in inquiries for immediate shipment, 4 cents a gallon is the active price, with the refiners hesitating to fill orders.

Fuel oil came back strong, with the coming into the market of the smelters at El Paso; prices quoted at 85 cents a barrel, were accepted, f.o.b. refinery, buyers' cars.

Gas oil remained steady at 2½ cents a gallon, with a brisk demand and no stock to fill orders.

At the close of the week, the market both as to price and demand, was more satisfactory to the manufacturers than for several weeks.

Late News From the Fields

OKLAHOMA

Another testimony regarding the freakishness of the Papoose Pool, in Hughes County, was contributed when T. B. Slick topped a pay sand in his No. 1 Scott, C SW NW NE, Section 3-9-9, at 3,287 feet, carrying 2,000,000 feet of wet gas and spraying about 25 bbls. of oil. It was shut down for tankage and a control head, and was setting the 6-inch pipe. This well will extend the producing area more than half a mile to the northeast, and completely upsets the predictions of geologists. The Papoose Oil Co. also brought in its No. 7, C NE SW SE, Section 4-9-9, which was good for 485 bbls. in 18 hours with the bit 1 foot in the oil sand. The top was found at 3,300 feet. first gas at 3,305 feet, and oil at 3,306-07 feet.

In the Stroud Field, the Waite Phillips Co.'s No. 2 Jacks, SW cor. NW NW, Section 7-14-7, Creek County side, made 2,600 bbls. at total depth of 4,154 feet in pay topped at 4,075 feet. The upper pay in this well was reached at 4,038 feet. Tuesday it wa smaking 2,100 bbls. The Roxana Petroleum Corp.'s No. 2 Zoller, SE cor. SW, Section 1-14-6, flowed 1,514 bbls. in a short 24 hours, from the sand topped at 4,115 feet, and found the big pay at 4,134 feet. When drilled 1 foot deeper, the first hour's production was 125 bbls. The tools were then lost in the hole and with that handicap the next hour's gauge was 70 bbls.

GULF COAST

HOUSTON, Tex., June 24.—The two deep tests of the United North & South Oil Co. in the Luling Field, are shut down temporarily. Thorman's No. 2 Harris, on the Guadalupe County side staged a gas blow out at 2,000 feet. It is under control and will be drilled into the lime.

Outside of the field, in Guadalupe County, Armstrong and others' No. 1 Baier, east of Seguin, is taking a core of the formation at 2,690 feet. The Rycade Petroleum Corp.'s No. 1 Meierhofer cored 7 feet into the Edwards lime at 2,450 feet. In the field, The Texas Co. has three rigs running on the Harris strips and the Danciger Oil Co. is drilling Nos. 3 and 4 McKean with a derrick for No. 5. The United North & South Co. has suspended operations temporarily.

In the Calliham district, in McMullen County, the Southern Natural Gas Co.'s No. 7 Lark is rated as a 15,000,000-foot gas well. The San Balt Oil Co.'s No. 6 is a 75-bbl. pumper and the Three Rivers Oil Co.'s No. 2 Stitz is pumping the same amount. The Kipp Oil Co.'s No. 3 Fisher, a gas well, turned to water and is being drilled at 1,000 feet.

The Houston Oil Co. abandoned No. 1 Mathey in Bexar, County; the Plateau Oil Co. and Texas & Pacific Coal & Oil Co. jointly are starting a second test in Live Oak County, 3 miles north of Oakville.

In Medina County, O'Brien and others started No. 2 near the wells of the Ins Oil Co. and Metzgar and others' No. 1, 1 mile southwest, is drilling at 809 feet. Hughes & Wharton have a derrick for No. 1 Finger, south of D'Hanis.

In Karnes County, E. B. Reynolds is drilling near Runge at 1,100 feet and Williams and others' No. 1, south of Karnes City, is below 1,000 feet. Sherset & Lane set surface casing in No. 1 Barrett, north of Karnes City. Hadely & Harmon are setting casing in the gasser at La Pyror, in Zavalla County, at 1,840 feet.

In Kleberg County, the Humble Oil & Refining Co.'s No. 1 Flate is drilling at 1,624 feet, with No. 1 King spudded in.

Russell and others abandoned No. 1 in the Wolcott Pool, in the Laredo district, at 1,810 feet. The Rydal Oil Co. is bailing No. 1, located east of the J. E. Hughes Co. No. 3 in the Aviator Pool.

In Fort Bend County, the Gulf Coast Development Co.'s No. 3 went into a water sand below 1,100 feet, which will be cased off and drilling resumed. Kountz Brothers' No. 1 Wilson, in Jasper County, is around 1,850 feet in the Wilcox formation.

COTTON VALLEY, LA.

SHREVEPORT, La., June 24.—The Gulf Refining Co.'s No. 1 A. J. Hodges, Section 11-21-10, in the Cotton Valley district, which came in last week making 600 bbls. of oil and 12,000,000 feet of gas, blew in early in the week with a production estimated at 10,000 bbls. Several times during the week, the well has sanded up and bridged over, being bailed back each time, and its ultimate outcome is still in doubt.

FEDERAL ATTORNEY GENERAL TO CONFER WITH STATES' ATTORNEYS

By Charles E. Kern

WASHINGTON, D. C., June 23.—Attorney General Stone has announced that he will hold a conference with the Attorneys General of several of the States early next month to discuss the entire oil and gasoline situation to determine whether there should be prosecutions for violations of the anti-trust law or failure to observe the dissolution decree handed down by the United States Supreme Court in the Standard Oil case in 1911.

It now appears that when President Coolidge received the report made for him of the oil situation by the Federal Trade Commission he sent it to Attorney General Stone for his analysis and report. In turn the Attorney General directed that members of his staff compile a summary of that report. The Department of Justice itself during the last six months has been investigating the oil situation with the direct purpose of ascertaining whether there has been a violation by the several Standard Oil Companies of the dissolution decree of 1911. A great deal of information on price movements and general conditions in the industry has been collected by the Department and the Attorney General will have all this data prepared in a form to be readily presented to the Attorneys General of the several States with whom he will confer in July.

Governor McMaster of South Dakota has been importuning the administration for activity by the Department of Justice.

Attorney General's Statement

Attorney General Stone gave out a statement in which he said in referring to the report of the Federal Trade Commission:

"This report was referred by the President to the Department of Justice, June 5. The report has special reference to the reason of increases in the price of gasoline in 1924.

"The inquiry on which it was based was undertaken by the Federal Trade Commission in response to a letter from the President. It will be recalled that the immediate occasion for the request was the receipt by the President of a letter from Governor W. H. McMaster, of South Dakota, complaining of alleged excessive prices.

"Fully six months ago the Department of Justice was making a comprehensive investigation of the gasoline situation.

"The investigation was directed more especially to ascertaining whether there has been a violation by the several Standard Oil Companies of the dissolution decree of 1911.

"In the course of the investigation much information has been collected bearing on price movements and other conditions in the industry.

"Because the investigations of the Department of Justice and the Federal Trade Commission necessarily have touched at many points and to some extent have overlapped, I have directed that I be furnished with a summary of the Commission's 500-page report along with the summary of the Department's investigation, my purpose being to consider them together.

"After I have become acquainted with the contents of these reports, some time in the early part of July, I expect to have a conference with the Attorneys General of certain of the States who are interested in this matter.

"Thereafter I hope to be able to make a more specific statement of the results of these investigations."

No Definite Charge Formed

Some of the attorneys at the Department of Justice have indicated a belief that evidence collected during the last year gives ground for a belief that there has been some price maintenance agreements among oil companies but there appears to be no definite charge formulated in this respect. These suspicions, and they cannot be regarded as any more than suspicions, are in connection with the increased gasoline prices that took place very early in the present year. The interesting fact, however, is that since that time prices have softened very much to the embarrassment of the oil industry itself and especially to producers. The oil industry may as well become reconciled to being hauled over hot coals until the political campaign and elections are over. From a political point of view no one will obtain any popularity by defending the oil producer, refiner and distributor. Popularity in this sense will run in the opposite direction.

Nothing could indicate the necessity for a wide distribution of "The Oil Industry's Answer" than the contemplated conference between the Attorney General of the United States and the Attorneys General of the States demanding prosecutions at this time. All of the primary facts that have been brought before the industry by The Oil and Gas Journal showing the actual conditions that prevail within the industry to account for price changes should now be given wide distribution. It is well known that the Democratic National Convention, about to assemble in New York City, is anxious to fire off some petroleum pyrotechnics and spellbinders will soon be on the stump telling 18,000,000 owners of automobiles, farm tractors and trucks that they are being robbed by the asking of an extortionate price for gasoline. In the absence of any denial and explanation of these prices and the situation in which oil producers find themselves the great public will be prone to lend a sympathetic ear to these orators. Now is the opportune time for some widespread educational work outside of the oil industry where misinformation is the rule.

Big Lake Co. Well, Reagan County, Texas, Does 60 Bbls. an Hour

FORT WORTH, Tex., June 24.—Reports from San Angelo say the Big Lake Oil Co. (Benedeum and Trees interests) Pittsburgh, Pa., No. 9 University land, Reagan County, is flowing steady around 60 bbls. an hour.

The new producer will probably establish the discovery of a new oil field after nearly two years of effort by several companies drilling in that territory. The discovery well was drilled by the Texon Oil & Land Co. It was drilled into the pay May 28, last year, and produced around 150 bbls. initial daily and is still producing better than 100 bbls. Nos. 2 and 3 University, drilled by the Big Lake Co., 1,200 feet northeast of the discovery well were completed as 40 to 50-bbl. pumpers. Nos. 6 and 7 University, the next completions, located to the northwest of the discovery well, were dry holes. No. 4 University, 1 mile south, is a 140-bbl. daily producer. No. 5, 2 miles northwest, 150 bbls. daily, No. 8, an offset to No. 1, 150 bbls. daily.

The No. 9 and late sensation was drilled only 3 feet into the pay formation at 2,982 feet. The tools are still in the hole. The pay was found around 55 feet higher than in the discovery well. No. 10 is drilling below 2,900 feet and is located 1,200 feet north of No. 9. It should be completed in a few days. Not a barrel of oil has been lost, due to advance preparations, all flowing into a 750-bbl. tank, from which it is being pumped to two 1,000-bbl. tanks, the first units of a tank farm a mile to the east. Construction of a third big tank is being rushed.

The Big Lake Oil Co. has 16 sections under lease on which is located this development.

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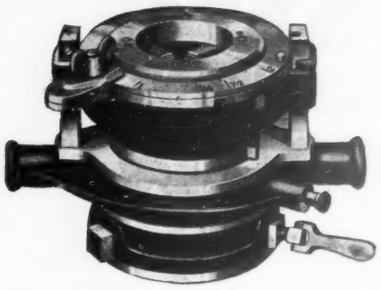

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"WHO'S WHO" IN TEXAS CRUDE PRODUCTION

(Continued from Page 20)

Tidal Oil, which has averaged about 400,000 bbls. per quarter in Oklahoma, has built up a good production in Texas with almost 2,500,000 bbls. in the 15-month period.

Roxana Petroleum (Dutch-Shell), with its half interest in the Comar, averaged over 800,000 bbls. a quarter, in Oklahoma before Tonkawa came in—but with the development of that prolific field its production jumped to over 3,000,000 bbls. for its peak quarter. In Texas, the Roxana's production has ranged from 60,000 bbls. to over 550,000 bbls. per quarter.

In checking over the list of medium size producers in Texas a number of names appear that are not in the list of Oklahoma companies. The largest producer during the last 15 months was the Republic Production Co. of which Frank Cullinan, former president of The Texas Co., is the central figure. It produced over 3,500,000 bbls. of oil during the 15 months. The Atlantic Oil Producing Co., the crude oil producing subsidiary of the Atlantic Refining Co., ranks second, with over 3,000,000 bbls. for the 15-month period.

In 2,000,000-Bbl. Class

In the "2,000,000-bbl. class" are the Texhoma Oil & Refining Co., Tidal Oil, Texas Pacific Coal & Oil, Simms Oil and the Sun Oil Co., all established companies, and the United North & South Co., a newcomer, that has skyrocketed out of the new Luling area which promises to be Texas' contribution in 1924 to our list of big fields. One big field each year for the last six years: Burkburnett, Ranger, Breckenridge, Mexia, Powell and now Luling, establishes Texas as a dependable oil producing State of the first class.

There are four companies in the "1,000,000-bbl. class"—Western Oil Fields Corp., Roxana, Sinclair and Snowden & McSweeney, with 12 companies producing over 500,000 bbls., and less than 1,000,000.

The five big companies produced 49 per cent of the oil in Texas, over the 15-month period. The 25 companies produced 24 per cent of the oil. Together these 30 companies produced 73 per cent of the oil, while 870 companies produced 27 per cent—all of which goes to prove that when it comes to "producing oil," which is the real foundation of the petroleum industry, the big companies do it.

The same situation prevails in Oklahoma that prevails in Texas. Kansas, Arkansas and Louisiana produce only a fraction of the oil produced in Texas and Oklahoma, but in a general way about the same situation prevails.

Big Companies Producers

In the Rocky Mountain area, the heart of which is the Salt Creek Field, the great bulk of the production, until very recently, has come from companies generally referred to as belonging to the Standard group.

In California, until the year 1923, the great buk of the oil was produced by seven companies:

Union Oil Co. of California.
Associated Oil Co.-Southern Pacific.
Standard Oil Co. (California).
Shell Co. of California.
General Petroleum Corp.
Doheny Companies.
Santa Fe Railway.

On March 1, 1920 the above seven companies owned 68 per cent of the proven oil lands of California, with 345 different concerns producing crude oil. In the same year these seven companies produced over 71 per cent of all the crude oil produced in the State. Three of these—the Associated-Southern Pacific, Standard of California and Union Oil of California owned 51 per cent of proven oil lands and produced 52 per cent of the States' production of crude oil. If to these three we add the Shell and the General Petroleum, the five together owned 58 per cent of the proven oil land and produced 62 per cent of the crude of the State.

The above five companies are the only important factors in the transportation of crude oil by pipe line and tank steamer—they are the only important factors in the refining of crude oil—and they are the only important factors in the marketing of refined products.

While of course the flood of oil in 1923 shifted the above percentages somewhat it did not materially change the background.

In 1923 the Mid-Continent, Gulf Coast, Rocky Mountain and Pacific Coast areas produced 95 per cent of all of the crude oil produced in the United States.

Bulk From 100 Companies

It is obvious therefore that the great bulk of the production of crude oil in the United States comes from less than 100 companies, while nominally there are about 16,000 producers of crude in the United States.

To attempt to interpret this situation as the slow, relentless, inescapable grinding of the "small producers" by the "big interests," and to impute to the big interests a clearly defined purpose and a carefully matured plan to crush the small producers, would be absolutely unfair to both the small producers and the so-called big interests. The basic idea in the mind of the smallest operators and the largest operator is to "procure oil." Fundamentally each has exactly the same purpose—and to insinuate, either privately, publicly or nationally, that in the carrying out of this purpose of producing crude oil, the small operator follows "the straight and narrow path" while the big corporations follow devious practices, or vice versa, is to throw into the interpretation of a strictly economic situation a psychological angle that is warped, distorted, unfair, basically wrong and that, with only the rarest of exceptions, has the slightest foundation in truth.

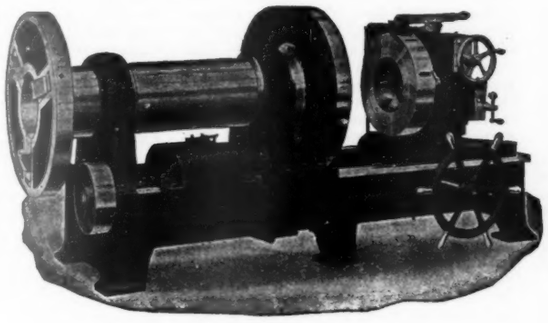
For months the "common people" of the United States have been groping through a heavy smoke screen supposed to have sprung from the "internal combustion of an odoriferous industry," only to emerge during recent weeks to find that the barrage had been laid down by misguided politicians who, knowing absolutely nothing of the fundamentals of the industry and without a single exception not being practical oil men, sought to "regulate" that industry.

A thousand people may crowd curiously around a soap-box orator, listening to his destructive interpretation of and fallacious remedy for industrial conditions that in our rapidly growing country struggle for solution. One of his audience follows him—and 999 go quietly home to a sober realization that in every line of industry "big corporations" are symbolic of America's progress, and America's industrial supremacy.

So, today, if in Texas five companies produce 49 per cent of the crude oil, 25 companies produce 24 per cent and 870 companies produce 27 per cent, that same general condition exists in every other big industry in the United States—and that fact is one of the basic reasons why, as a Nation, we have made such amazing industrial progress in the last hundred years.

WOULD RAISE TAX BUT EXEMPT CASINGHEAD

A bill introduced in the Louisiana Legislature by Representative Wilkinson, would amend the Act of 1922, levying a tax of 1 cent per gallon on all gasoline or motor fuel sold in the State of Louisiana for domestic consumption. The new bill provided for a tax of 2 cents per gallin. Casinghead gasoline is exempt from the provisions of the act, "when sold to be blended or compounded with either less volatile liquids in the manufacture of commercial gasoline or motor fuel. When, however, such casinghead and absorption gasoline is sold for use in motors direct or is sold to those who blend for their own use, the tax of 2 cents per gallon shall be paid."



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OKLAHOMA FIELDS

(Continued from Page 35)

topped the sand at 2,980 feet, found oil at 2,900-45 feet and when shot with 110 quarts made 50 bbls.; No. 8, CNL NW NE SE, same section, was shot with 150 quarts, making 350 bbls. afterward from sand at 2,905-90 feet; No. 9, CNL NE NW SE, same section, topped the sand at 2,905 feet, found oil at 2,917-68 feet, and after a 120-quart shot made 350 bbls.; No. 10, C NE SW SE, same section, was good for 40 bbls. after a 120-quart shot in sand at 2,896-2,945 feet, with first oil at 2,901 feet; No. 11, C SE NW SE, same section, was spudding; No. 12, C SW NE SE, same section, was drilling at 400 feet.

The Phillips Petroleum Co.'s No. 1, NW cor. SE, Section 20-27-6, was drilling at 610 feet; No. 2, CWL SW NW SE, same section, was spudding; No. 6, CSL SW SE NW, same section, was drilling at 310 feet.

Carter Operations

The Carter Oil Co.'s No. 8, CNL NE SE SW, Section 16-26-6, topped the sand at 2,877 feet, found oil at 2,890-2,945 feet and when shot with 120 quarts was good for 608 bbls.; No. 9, C SE NW SW, same section, was a 400-bbl. producer after a 105-quart shot in sand at 2,900-71 feet; No. 12, C NE SW SW, same section, was drilling at 845 feet; No. 7, CEL SE NE SE, same section, was a 400-bbl. producer after a 105-quart shot in sand at 2,900-71 feet; No. 12, C NE SW SW, same section, was drilling at 845 feet; No. 7, CEL SE NE SE, same section, was good for 124 bbls. after an 80-quart shot in oil sand at 2,945-62 feet.

The Cosden Oil & Gas Co.'s No. 10, NE cor. SW, Section 14-27-5, was a 250-bbl. well after a 55-quart shot in sand at 3,003-43 feet; No. 13, C NW SE SW, same section, made 90 bbls. when shot with 30 quarts in sand at 3,054-72 feet; No. 16, C SW NE SW, same section, was shot in sand at 3,020-63 feet; No. 11 CEL SE NE SE, same section, was flowing 225 bbls. from sand at 2,966-3,010 feet; No. 12, CEL NE SE SE, same section, an old well, was shot with 12 quarts in sand at 2,998-3,0[illegible]3 feet and responded with 200 bbls.; No. 15, C SE NW SE, same section, made 336 bbls. after a 55-quart shot in oil sand at 2,992-3,034 feet.

The Cosden Oil & Gas Co.'s No. 4, SW cor. Section 14-27-5, made 100 bbls. in the first 5 hours from oil sand at 3,040-80 feet. The same company's No. 14, C NE SW SW, same section, was cleaning out and making about 40 bbls. in 18 hours after a 60-quart shot in sand at 3,074-3,120 feet. The same company's No. 10, NE cor. SE, Section 14-27-5, which made 150 bbls. natural from sand at 2,985-3,030 feet, was shot with 55 quarts and increased to 350 bbls.

On the Mid-Kansas Oil & Gas Co.'s new tract in the NW of Section 26-27-5, No. 1, NW cor., was shot with 20 quarts in sand at 2,959-73 feet and increased 10 bbls. to 190 bbls.; No. 4, NE cor. NW, same section, had a hole full of oil from sand at 2,971-3,030 feet. Peters & Oliphant had a rig up and were moving in tools for their No. 2, CWL NW SW NW, Section 17-27-6.

Kay County Extension

In the Extension, Kay County, the Phillips Petroleum Co. shot its No. 4 Cooper, SE cor. NW, Section 3-27-5, with 40 quarts in sand at 2,868-2,946 feet and it made 100 bbls. George S. Bole was drilling at 700 feet in his No. 1, NE cor. Section 8-27-5. The Carter Oil Co.'s old well, No. 5 Clubb, CSL SE SW SW, Section 10-27-5, was treated with 20 quarts in sand at 3,037-50 feet and made 320 bbls. as a result. The same company's No. 6, CSL SW SE SW, same section, was good for 347 bbls. following a 20-quart shot in sand at 3,064-84 feet.

Northeast of the Tonkawa Field, in southern Kay County, the Producers & Refiners Corp. abandoned its No. 1, CWL SW NE SE, Section 13-27-1e, at 1,200 feet.

In the new Thomas area, northwest of Tonkawa, the Marland Refining Co.'s No. 1 Smith, SE cor. Section 16-25-2w, was drilling at 275 feet. The same company's No. 1 Thomas, SE cor. SW, same section, was drilling at 710 feet. The Carter Oil Co. was spudding its No. 1 Powers, NE cor. Section 21-25-2w. McCaskey & Wentz were drilling at 835 feet in their No. 1 Thomas, NE cor. NW, Section 21-25-2w, and the Marland Refining Co.'s No. 2 Smith, SW cor. SE, Section 16-25-2w, was drilling at 175 feet. The Twin State Oil Co. was spudding its No. 1 Thomas, NW cor. Section 22-25-2w.

In the Tonkawa Field, the Marland Refining Co. and Cosden Oil & Gas Co. were drilling at 2,180 feet in their No. 2 School land, NE cor. SE, Section 33-25-1w, an old well. McCaskey & Wentz were building a rig for their No. 46 McKee, CEL SE SW, Section 34-25-1w. The Pennok Oil Co. cemented the 6-inch at 2,180 feet in its No. 3-C Endicott, SW cor. SE, Section 34-25-1w, and was building rigs for its No. 3-D, CSL NW SW SE, and for No. 6-D, CSL SE SW SE, same section.

In Noble County, Jankowsky and others abandoned the location for their No. 1, SW cor. Section 25-23-1w.

Pawnee County

Pawnee County was the scene of unusual activity. The Elmer Oil Co. shot its No. 3 Remmer, CWL NW SW, Section 16-20-6, with 30 quarts in sand at 3,026-59 feet and made 65 bbls. The Magnolia Petroleum Co.'s No. 4 Kline, SW cor. NW, same section, topped the sand at 3,050 feet and found first oil at 3,055 feet. Daniel & Ebert abandoned their No. 1, NE cor. SW, Section 27-21-7, at 480 feet. J. B. Grieves had 1,500,000 feet of gas in his No. 2 Anglin, NW cor. NE SW, Section 31-21-8, in sand at 2,430-34 feet. Adamson and others were spudding their No. 1-A Myers, NW cor. NE SW, Section 32-21-8. Mason & Lyons shot their No. 2 Miller, CWL SW NE SE, Section 4-20-7, with 10 quarts and it made 20 bbls. from sand at 2,140-53 feet. Clifford & Van Eman had a rig in place for their No. 1 Van Eman, SW cor. NE NE, Section 17-20-7, and Ed Reese and associates were building a rig for their No. 1 Van Eman, NE cor. Section 17-20-7.

In the northwestern part of the county, the Watchorn Oil & Gas Co.'s No. 4 Miller, SW cor. Section 33-23-3, made 1,510 bbls. naturally from sand at 4,102-09 feet. The Magnolia Petroleum Co. abandoned the location for its No. 1 Ely, NW cor. SE SE, Section 33-23-3.

J. J. Donahue was underreaming the 12-inch to 875 feet in his No. 1, NW cor. SE, Section 22-23-4, and the Magnolia Petroleum Co. was rigging up its No. 2, NW cor. SE, Section 4-22-3. The same company's No. 1 Wolfe, NE cor. SE, Section 5-22-3, an old well that was plugged and abandoned at 3,700 feet, was drilling again at 760 feet. The Kingwood Oil Co. had a rig up for a wildcat test in its No. 1, SW cor. Section 26-21-4.

The Magnolia Petroleum Co.'s No. 1 Gowling, SW cor. Section 9-20-6, was good for 50 bbls. following a 20-quart shot in sand at 3,085-92 feet. The Jim Glenn Oil Co.'s No. 3 Jackson, SW cor. SE NE, Section 16-20-6, was a 400-bbl. well after a 40-quart shot in sand at 3,026-3,115 feet, with first oil at 3,060 feet. The Magnolia's No. 4 Kline, SW cor. NW, Section 16-20-6, made 150 bbls. after it was treated to 40 quarts in sand at 3,055-3,105 feet. The same company had a rig on the ground for its No. 1 Bingman, NE cor. NW NE, same section. Martin & Dempsey were getting 21,000,000 feet of gas out of their old well, No. 2 Leshow, NW cor. SW NW, Section 22-20-6, after deepening it from 2,821 feet to sand at 3,025-44 feet.

Clifford & Van Eman were drilling their No. 1 Van Eman, SW cor. NE NE,

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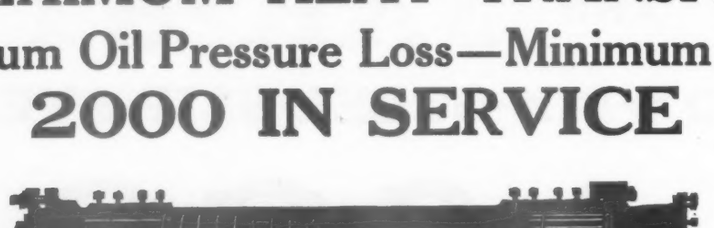

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Section 17-20-7, at 360 feet. Wallace and associates had a 50-bbl. showing in their No. 1-A Hennesy, CSL NW NE SW, Section 20-20-8, in sand at 2,729-35 feet, but were going to drill deeper.

The Mutual Oil Co. had a 20-bbl. well in its No. 9, CNL SW NW, Section 25-20-9, following a shot of 160 quarts in sand at 1,116-57 feet.

The Shaffer Oil & Refining Co. abandoned its No. 1 Shaffer, NW cor. NE SW, Section 18-20-10, as a duster at 2,875 feet.

Payne and Okfuskee

In Payne County, the Carter Oil Co. had a rig up for its No. 2 Cox, C NE NW SE, Section 17-19-6, and was spudding its No. 1 Moser, C SW SE NE, same section. The Magnolia Petroleum Co. swabbed 40 bbls. from its No. 1 Underwood, NW cor. SW, Section 21-19-6, from sand at 3,448-49 feet, but was drilling ahead at 3,460 feet. The Home Gas Co. was drilling its No. 1 Putty, NW cor. NE, Section 28-18-5, an old well, at 3,800 feet.

In Okfuskee County, the Phillips Petroleum Co. abandoned its No. 1 Washington, NW cor. NE, Section 12-13-7, as a duster at 4,200 feet. The North Baltimore Oil Co.'s No. 6 Sugar, CWL SE NE, Section 13-12-11, was shot with 40 quarts and made 130 bbls. from sand at 2,678-90 feet. The Independent Oil & Gas Co. was drilling at 915 feet in its No. 1 Carolina, NE cor. SW SW, Section 33-12-11. The Angelo Texas Oil Co. had a rig on the ground for its No. 1 Holmes, SW cor. SE, Section 34-12-11. W. B. Pine shot his No. 1 Myers, CSL SE SW, Section 34-12-11, with 60 quarts in sand at 2,670-95 feet and it made 20 bbls. The Sinclair Oil & Gas Co.'s old well, No. 1, NE cor. SE, Section 34-11-11, was good for 15 bbls. naturally from sand at 2,602-10 feet.

In Pontotoc County, the M. M. Valerius Oil & Gas Co. plugged its No. 1 Kah, SW cor. NE, Section 28-3n-4e, as a failure at 1,065 feet. The same company's No. 1 Stanfield, NE cor. SW, same section, was likewise a duster at 1,940 feet.

In the Stroud Field

In the Stroud Field, Lincoln County, the Union Petroleum & Supply Co.'s No. 4 Townsite, in Block 9, Section 12-14-6, was good for 2,200 bbls. naturally from sand at 4,105-72 feet. The same company's No. 1 Jackson, SE cor. Section 2-14-6, the discovery well in the field, was deepened 10 feet, increasing from 625 bbls. to 1,300 bbls. from sand at 4,082-4,138 feet. The Texas Co. was building a rig for its No. 2 Barber, SE cor. NE, Section 11-14-6, and the Amerada Petroleum Corp. was drilling its No. 8 Lewis, in the Creek County strip, at 1,115 feet. Frank Dowell was drilling his No. 1 Townsite, in Block 5, Section 12-14-6, at 510 feet, and J. A. Hull was down below 439 feet in No. 6 Dowell, SE cor. SW SW, Section 12-14-6. C. F. Noble was drilling his No. 1 Townsite, in Block 8, at 1,220 feet, and the Roxana Petroleum Corp. was building a rig for No. 3 Brace, CNL NW SE SW, Section 12-14-6. The Union Petroleum & Supply Co.'s No. 6 Townsite, in Block 9, was drilling at 925 feet.

In northern Linclon County, the Plateau Oil Co.'s No. 1, SE cor. Section 28-17-3, was dry and abandoned at 4,070 feet.

A disappointment was reported by Macho Oil Co. and others when they plugged their No. 1 Wyman, CSL NW NE NE, Section 10-16-6, at 4,321 feet.

In the Wewoka Field

In the Wewoka Field, the Dixie Oil Co.'s No. 2 Long, C NW NE SW, Section 33-8-8, was abandoned as dry at 3,170 feet. The same company's No. 3, C SE SW NW, same section, was also a failure and was plugged at 3,350 feet.

The Independent Oil & Gas Co. and Sinclair Oil & Gas Co. swabbed 40 bbls. after a shot of 40 quarts in their No. 1 Grayson, C NE SE SE, Section 32-8-8, from sand at 3,143-74 feet, with total depth at 3,200 feet.

To the north, the Homaokla Oil Co. was spudding its No. 1 J. Brown, C NE SW SE, Section 29-8-8, and the Dixie Oil Co. was drilling its No. 3 M. Walker, C SW NE SE, same section, at 245 feet. The Amerada Petroleum Corp. had a rig on the ground for its No. 2 Joseph, C SE SW NE, same section. Further north, the Roxana Petroleum Corp. was drilling its No. 1, C NW NE NW, Section 12-8-8, at 2,290 feet.

To the south, the Lewis Oil Co. plugged its No. 2 Long, SW cor. NE NW, Section 4-7-8, as a duster at 3,298 feet.

In the Papoose Pool, Hughes County, the White Eagle Oil & Refining Co. had a rig on the ground for its No. 1 C. Brown, C SW SE SW, Section 8-9-9. The Papoose Oil Co.'s No. 1 Hill, NW cor. NE, Section 9-9-9, made 125 bbls. the first 24 hours from sand at 3,328-32 feet but dropped to 40 bbls. on the fourth day. The Transcontinental Oil Co. had rigs built for its No. 2, C NE SW NE, Section 4-9-9, and for No. 3, C SW SE NE, same section. Champlin & Winkler were spudding their No. 2, NE cor. SW, same section, and the Berry Petroleum Co. was building a rig for its No. 4 Alexander, C NE NW SE, same section.

Southeast of the pool, C. J. Wrightsman abandoned his No. 1 Brown, SE cor. NE, Section 23-9-9, as a failure at 3,307 feet.

The Sinclair Oil & Gas Co. had a rig on the ground for its No. 1 Willis, C NE NE SE, Section 5-9-9.

The Foster Oil Co. had a rig on the ground for its No. 3 Tiger, C NW NW NE, Section 4-9-9. The Papoose Oil Co.'s No. 4 Alexander, C NE NE SE, same section, was making 10 bbls. daily from sand at 3,303-20 feet, and it was cutting about 10 per cent. The same company's No. 8 Alexander, SE cor. same section, was drilling at 210 feet, and a rig was being built for No. 10 Alexander, CWL NW NE SE, same section.

In the lower part of the township, the Margay Oil Corp. skidded the rig on its No. 1 Brown, SE cor. SW SW, Section 17-9-9, 50 feet north. The Roxana Petroleum Corp. was drilling at 865 feet in its No. 1 Brown, C NE NE SW, same section, and the Wilcox Oil & Gas Co. was drilling at 350 feet in its No. 3 Brown, C NE SE NW, same section.

Sholem Alechem Field

In the Sholem Alechem Field of Carter County, the Humble Oil & Refining Co. was drilling its No. 1 Spears, C NE NE NW, Section 29-1s-3w, at 2,605 feet, and was down 2,552 feet in its No. 1 Miller, C NW NW NE, same section. The same company's No. 1, C NE NE NE, Section 33-1s-3w, flowed 62 bbls. from sand at 3,305-23 feet.

The Patsy Oil Co.'s old well, No. 5 Palmer, C NE SE SE, Section 31-2s-2w, an old well, was good for 20 bbls. in sand at 2,655-2,700 feet, with total depth at 2,870 feet.

The Humble Oil & Refining Co.'s No. 1 Carpenter, C SE NE NE, Section 22-2s-3w, was drilling at 2,455 feet. The Fox Petroleum Co. abandoned the rig for its No. 2 Williams, CWL SW NE NW, Section 23-2s-3w. The Humble Oil & Refining Co.'s No. 1 Williams, C NE SE NW, Section 23-2s-3w, was swabbing 86 bbls. from total depth of 2,530 feet. The Magnolia Petroleum Co.'s No. 7 Lahman, C SW NW SE, same section, was drilling at 210 feet. The same company's No. 2 Lahman, C SW NW NW, Section 23, was good for 80 bbls. of oil from sand at 2,435-50 feet. Wirt Franklin's No. 6 Gallagher, C SW SW NE, Section 25-2s-3w, was making 100 bbls. from broken sand at 2,533-93 feet with total depth at 2,612 feet. The Twin State Oil Co. was cleaning out and swabbing 50 bbls. from sands at 2,498-2,525 feet.

The Merrick-Kirk interests had a 125-bbl. well from sands at 2,556-2,620 feet in their No. 4 Cobb, C NW NW SW, Section 5-3s-2w.

Hewitt Field Operations

In the Hewitt Field of Carter County, the Wolverine Oil Co.'s old well, No. 83 Dillard, NE cor. NW NE, Section 22-4s-2w, was swabbing 100 bbls. from sand

(Continued on Page 119)

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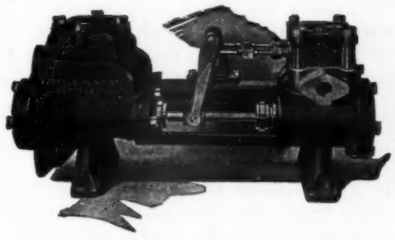

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PRODUCING Royalties in Texas bought and sold. J. F. Marion Co., Magnolia Bldg., Dallas, Texas.

LOGAN COUNTY is getting good play by big companies. Get in ahead of production. For checkerboarded oil leases, priced cheap, write Box 366, Guthrie, Okla.

7,000 ACRES for sale or further development; 5,000,000 feet of gas, 885 feet. Ready market; best geological reports. Rentals, 10 cents; perfect structure; oil showing acreage in oil zone of Arkansas Valley. R. B. Sadler, Paris, Ark.

FREE MAP

Of Sheffield Terrace (Marathon Fold) to those interested in leases. We have leases in dozens of counties along this fold and our prices are the lowest. Get particulars. No obligation. Gulf Realty Co., 283 Bedell Bldg., San Antonio, Texas.

IF I had my Wants listed in this section they would receive the same attention that thousands are giving the good advertisements already here.

FOR SALE—Oil and gas leases around all wildcat drilling wells in eastern Kentucky. I own several blocks, located on good structure with good prospects for oil or gas. Suitable for syndicate. George S. Engle, Ben Ali Bldg., Lexington, Ky.

MARATHON FOLD AND TEXAS PANHANDLE

LEASES in Reagon, Crockett, Pecos, Terrell, Glasscock, Sterling, Gray, Carson, Armstrong, Donley, Wheeler, Hemphill and other counties in Marathon Fold and Texas Panhandle. Lowest prices; best locations. Write for free maps and reports. P. R. MacIntosh, 215 Neil P. Anderson Bldg., Fort Worth, Texas.

INFORMATION

On wells or production. Value of leases, pipe and rigs. Will buy leases or secure drilling contracts. Business entrusted will have confidence you expect. Charges $1.50 an hour. Territory, radius 100 miles. Reference, any kind. Nothing to sell. Write, Texas Service Co., Box 196, Breckenridge, Texas.

TEXAS

CARSON COUNTY—Our well, the Culbertson strikes oil and gas at 1,210 feet; first shallow record for the Panhandle; we are selling limited amount our acreage around this well; get in while prices are low—now $10 to $100; large companies have acreage about us; late contour map free.
TEXAS-OKLAHOMA LEASE CO.
1418 Kirby Bldg., Dallas, Texas

SHEFFIELD TERRACE LEASES

Leases in Crockett, Pecos, Irion, Coke, Sutton, Sterling, Tom Green, and others along the Marathon Fold, as low as 75 cents an acre. Also leases along Balcones Fault, in Guadalupe, Bexar, Wilson, Karnes, etc. Will sell 10 acres or more. All new 5-year commercial leases. Get particulars. No obligation.
GULF REALTY COMPANY
282 Bedell Bldg. San Antonio, Texas

ADVERTISING RATES

The cost of advertising in the Classified Wants Section is very reasonable. It costs 25 cents a line for the first insertion and 15 cents a line for each following insertion. Six words usually make a line. Cash with the order.

This useful table will help you to figure the cost of advertising in this Classified Section. Keep it for reference:

	One Time	Two Times	Three Times	One Month
3 lines..	$ .75	$1.20	$1.65	$2.10
4 lines..	1.00	1.60	2.20	2.80
5 lines..	1.25	2.00	2.75	3.50
6 lines..	1.50	2.40	3.30	4.20
7 lines..	1.75	2.80	3.85	4.90
8 lines..	2.00	3.20	4.40	5.60
9 lines..	2.25	3.60	4.95	6.30
10 lines..	2.50	4.00	5.50	7.00

LEASES—PRODUCTION

POTTAWATOMIE COUNTY, Oklahoma Leases and Royalties. Box 8, Tecumseh, Okla.

FOR SALE—Kevin oil land leases and royalties, near good producing wells. Postmaster, Aloe, Mont.

ONE-HALF INTEREST, quarter section royalty, Lincoln County, 1½ miles drilling well. B. H. Rowlett and Company, Tecumseh, Okla.

BEST VALUES in western Kentucky. Large and small productions, drilling propositions; leases. Information on request. Box 523, Bowling Green, Ky.

FOR SALE or lease; 100 acres in proven Cat Creek, Montana Field. Address Raymond Carlson, Deer Lodge, Mont.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

GUADALUPE COUNTY LEASES

$3 AN ACRE

Lease between Seguin and Cibilo River, in Guadalupe County, Texas, where dozens of the largest companies in the United States hold leases, and where several tests are soon to be drilled, can be had today for $3 an acre. Get particulars.

We also have leases along Marathon Fold and Balcones Fault from 10 cents an acre up. Here are a few of them:

Reagan County	$3.50 an acre
Pecos County	$1.00 an acre
Medina County	50c an acre
Crockett County	$2.00 an acre
Bandera County	40c an acre
Gillespie County	10c an acre

30 other counties.

Free map of Texas, showing the Marathon Fold and Balcones Fault is given with each inquiry. Write today for our latest list of bargin leases in Texas and free map. No obligation.

GULF REALTY CO.
284 Bedell Bldg. San Antonio, Texas

OHIO PRODUCTION WANTED

We have cash purchasers for established pumping production. Write full details of output, grade, sale price, etc.
SCHAMBS & CO., BROKERS
Suite 434 Rowlands Bldg., Columbus, O.

WILL SELL 67½ acres Tampico oil land at a reasonable price with terms; between two fields producing 25,000 to 60,000 bbls.; water and rail transportation; clear title. F. A. Carvajal, San Antonio, Texas.

OPERATORS—The stampede is on in Montgomery County, Mississippi, world's next big high gravity oil field. Winona, Miss., mecca of oil men. Balcones Fault leases. W. C. Brooks, Memphis, Tenn.

MISSISSIPPI LEASES—Ten or more drills are actively at work in Mississippi. The time to invest in leases is ahead of the drill. Am offering leases near development at from $1 to $10 per acre. Can supply several large blocks to parties desiring to exploit this most promising territory. R. S. Withers, 418 Edwards Hotel Bldg., Jackson, Miss.

WHITE SPACE at the top and bottom of an advertisement makes it conspicuous. Ask for it in your next advertisement. Figure the cost at regular rates per line.

DRILLING CONTRACT
MISSISSIPPI

Will give 15,000 acres choice leases, Form 88, located on positive structure in southeast Mississippi, for 4,000-foot test. Party must be responsible and in position to begin operations at once, large gas blowout, with crater now giving off considerable gas and big oil seepage in vicinity of leases. It's a good thing if you can handle it. Only rotary machine will do. Address H. A. Potter, Edwards Building, Jackson, Miss.

LEASES—PRODUCTION

FOR SALE—400 acres oil leases in Metcalfe County, Kentucky, in blocks of 25 to 100 acres. J. W. Ruff, 205 St. Phillip St., Charleston, S. C.

MR. OPERATOR—Can deliver several drilling blocks, large and small, along Balcone and Southwest Texas; good geology. F .B. Jones, Travis Bldg., San Antonio, Texas.

I MADE blocks for first paying wells in Seminole and Hughes County; invest a little money in royalties on other structures ahead of drill. Unquestioned references. W. J. Ryan, Holdenville, Okla.

20 WELLS drilling or located in Moffat County, Colorado. We have attractive royalties and leases to offer. Moffat County Investment Co., Craig, Colo.

OIL LEASES for sale; 12 different counties near San Antonio, Texas, 15 in Guadalupe County, mostly 40-acre blocks; or anyone interested to drill shallow oil with me. William Mendelin, 5029 Calumet Ave., Chicago, Ill.

NEW MEXICO

Oil and gas leases, 25,000 acres; Lincoln and Roosevelt Counties; 25 cents per acre; Chaves, Lea and Eddy, 50 cents per acre. New Mexico Lease Holding Co., Box 734, Roswell, N. M.

EASTERN New Mexico State oil leases; 5-year renewable; 5-cent rental; 20,000 acres in Salt Creek region; good possibilities; development expected. Sold in section units, 25 cents per acre. Good to hold for drilling or speculation purposes. McDonald & Jewett, Roswell, New Mexico.

640 ACRES, new five-year commercial Producers "88" oil and gas leases. Eastman Poll, Cowley County, Kansas. Within 2 miles of new 735-bbl. well and several others making 300 to 400 bbls. daily. Priced right, if taken at once. R. P. O'Grady, 404 Gumbel Bldg., Kansas City, Mo.

WHITE SPACE at the top and bottom of an advertisement makes it conspicuous. Ask for it in your next advertisement. Figure the cost at regular rates per line.

PRODUCTION FOR SALE

Eight barrels settled production, four wells; 1,000 acres, flush production, 7 to 8 bbls., room for 50 wells of this kind; have $10,000 in equipment, two drilling rigs and loading rack on switch; 10 wells here will make a man a fortune; wells cost $1,000, completed to tank; oil sells for $2.50 at switch. Six pay sands under this shallow production to Woodbine. More than I can finance alone; will sell all or part interest. If you overlook this, you overlook one of the best bets in Texas today. Come here and let me show you. H. C. Jennings, Bonner Hotel, Lufkin, Angelina County, Texas.

GUADALUPE COUNTY LEASES

$3.00 AN ACRE

Lease between Seguin and Cibilo River in Guadalupe County, Texas, where dozen of the largest companies in the United States hold leases, and where several tests are soon to be drilled can be had today for $3 an acre. Get particulars.

We also have leases along Marathon Fold and Balcones Fault from 10 cents an acre up. Here are a few of them:

Reagan County	$3.50 an acre
Pecos County	1.00 an acre
Medina County	.50 an acre
Crockett County	2.00 an acre
Bandera County	.40 an acre
Gillespie County	.10 an acre

30 other counties.

Free map of Texas showing the Marathon Fold and Balcones Fault is given with each inquiry. Write today for our latest list of bargain leases in Texas and free map. No obligation.
GULF REALTY COMPANY
284 Bedell Bldg., San Antonio, Texas

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

IN TONKAWA FIELD, 40 acres for lease, SE ¼ of SE¼, Section 7, Township 24, Range 1 west. Address George M. Stull, 1424 S. Sanfernando Road, Glendale, Cal.

JUST THINK! $2.80 will pay for sending a four-line advertisement all around the world, four times. A four-line Classified Advertisement usually consists of 24 words and you know a great deal can be told in a few words. Mail your advertisement to the Classified Section now so that you will get in next Thursday's issue.

FOR SALE—16,000 acres Montana land in fee, with all oil and mineral rights or oil rights separately. Good geology. C. E. Honkomp, Cashier, First National Bank, Ashton, Iowa.

NEED LOCAL REPRESENTATION?
Am desirous of forming connection with capitalists, syndicate, broker or company to represent them in Kansas, as buyer or confidential agent in anything that pertains to oil. Any equitable plan of compensation considered. Glad to furnish desired references, and in so doing prove my character, integrity, standing in community, acquaintance, knowledge of business and ability. All replies treated confidential. Address Box A-270, care The Oil and Gas Journal, Tulsa, Okla.

WHITE SPACE at the top and bottom of an advertisement makes it conspicuous. Ask for it in your next advertisement. Figure the cost at the regular rates per line.

OIL ROYALTY—In the new Blackwell Pool. Units in 160 acres, offset to production. Royalty deed from land owner to buyers. Write today for full information to J. R. Sparks, Blackwell, Okla.

40-ACRE LEASE located in northwest quarter of the southwest quarter, Section 9, Township 14 north, Range 6 west, Canadian County, Oklahoma, for releasing or drilling rights. Have had lease over year and wish to sell or have drilled. Lease recorded in El Reno, Okla., March 23, 1923. For further information, write P. O. Box 974, San Pedro, Cal.

FOR SALE—EQUIPMENT

FOR SALE
27 Star Drilling Rig, boiler and equipment; would sell on part payment to right party. The State Bank of Rantoul, Rantoul, Kans.

WHITE SPACE at the top and bottom of an advertisement makes it conspicuous. Ask for it in your next advertisement. Figure the cost at regular rates per line.

P. & H. TRENCHER
24-inch to 28-inch Trench, 7-foot, 6-inch depth; Wheel Type No. 105; practically new.
ROSS POWER EQUIPMENT CO.
Indianapolis, Ind.

25,000 BARREL TANK
STILLS, condensor boxes, boilers; large quantity of various size fittings; all in A-1 condition. Priced at a bargain. Call or write F. A. Sanders, 420 Mayo Bldg., Tulsa, Okla., phone Osage 7037, or 98, Jennings, Okla.

THE SCHEME of life is so arranged that some men have capital and need equipment, while others have salable articles and need cash. For these men, The Oil and Gas Journal Classified Section provides an excellent opportunity to broadcast their wants.

AIR OUTFITS — Standard, complete, new, $55 up. Vulcanizers Supply Co., No. 7 E. 14th, Kansas City, Mo.

FOR SALE—EQUIPMENT

FOR SALE—Tankers, 16,000 and 30,000-bbl. capacity; barge, 40,000 barrels, Gulf Coast. Wanted, tankers and barges. Box 653, Kansas City, Mo.

FOR SALE—Three-quarter-ton White truck, slightly used, or will consider trade for spider and silps, 6- 8-, or 10-inch Swan underreamer, heavy 10-inch bits, Wilson Elevators or Dunn Tongs. Box 106, El Dorado, Kans.

GENERAL GEAR &
MACHINE WORKS
"If It's Done in Metal, We Do It"
Gear cutting, blacksmithing, machining, welding, die making, and metal stamping.
115 South Detroit, Tulsa, Okla.

THE TIME SPENT in writing a description of the good material which you would like to procure at a reasonable price will be well spent if you mail it to The Oil and Gas Journal Classified Wants Department for next week's issue.
The Classified Wants Section will help you to get just what you want, as the students of the Classified Section are great in number and control the buying or selling of a large portion of the material used in the oil and gas industry. Let your fellow readers help you. He can, if you put your advertisement in the Classified Wants Section.

100 — 10,000-gallon, — 100,000 capacity tank cars; strictly first class; low price to move quick. Figure with us on rails, locomotives, cars, pipe, steel piling, etc.
ZELNICKER IN ST. LOUIS

90 HORSE POWER GAS ENGINE
4-Cylinder Bruce-Macbeth Gas Engine, in perfect running order.
It is necessary that we dispose of this and make a very low price. Has only been run five to six years.
FROST SUPERIOR FENCE
COMPANY
Warren, Ohio.

TANK BOLTS

SAME-DAY SHIPMENT

⅛x¾-inch, ⅜x¾-inch, ⅜x1-inch, ⅜x1¼-inch, ½x1-inch.
Write or Wire for Quotations

STEEL MFG. & WAREHOUSE CO

1447 Genesee St. Kansas City, Mo

THE SMALL SUM that it costs to insert an advertisement in the Classified Section of The Oil and Gas Journal enables you to place your desires in the minds of men who are always interested in a good proposition.

FOR IMMEDIATE SHIPMENT—Second hand line pipe and casing in A-1 condition:
10 miles of 3-inch Standard line pipe.
5 miles of 4-inch Standard line pipe.
5 miles of 6-inch Standard line pipe.
70,000 feet 6⅝-inch 20- and 24-lb. casing.
60,000 feet of 8¼-inch 28-lb. casing.
20,000 feet of 10-inch 35- and 40-lb. casing.
5,000 feet of 12½-inch 50-lb. casing.
2,000 feet of 15½-inch 70-lb. casing.
JOSEPH DAVIS COMPANY
613 Kennedy Bldg., Tulsa, Okla.

COMPLETE Union Tool Rotary drilling rig; twin-cylinder engine; two 45-H. P. boilers; 2,400 feet of 4-inch drill stem; new Hughes rock bit; complete set fishtail bits; mud hog pump. This rig is complete and in good condition. Can be seen at Dixie Oil Co. lease, Cement, Okla.

FOR SALE—EQUIPMENT

FOR SALE—Putman 24-inch swing by 24-foot bed, screw cutting engine lathe. Will cut threads from 1-16-inch to 1-inch. Write for particulars. Address Box A-258, care The Oil and Gas Journal, Tulsa, Okla.

GRAY IRON CASTINGS
Inquiries for Prices
Appreciated and Promptly
Answered
LAURELTON FOUNDRY CO.
Laurelton, Pa.

I OUGHT to be able to sell equipment through this section. It must bring good results, because it is filled with Classified Advertisements every week. Guess I'll try it.

FOR SALE
150 FEET 15½-inch casing; 900 feet 12½-inch, 50-pound; 1,000 feet 10-inch, 40-pound; 2,700 feet 8¼-inch, 32-pound, 8-thread, J. & L. Woodlawn. Special, 3,200 feet 8¼-inch, 28-pound casing; 3,400 feet, 6¼-inch, 24-pound, 10-thread; J. & L. Woodlawn Special new thread protectors on all. J. F. Arnold Co., Decatur, Ind.

THE RESULT producing benefits of The Oil and Gas Journal Classified Wants Section is helping the men of the industry to get the maximum good out of their equipment.
Good machinery, equipment, etc., is being kept in operation by reason of alert men buying and selling through the Classified Wants Section.
These men know that it is economically sound for a concern to sell good equipment which it cannot use. Therefore, thrifty executives use the Classified Wants Section as an economizing move that is helpful to the entire industry.
Read the advertisements in the Classified Wants Section every week. It will help you.

EQUIPMENT

45-H. P. boiler, 8,500-gallon steel tank, Ingersoll-Rand air compressor, Epping Carpenter pump, 9x5x10; Lucey Gumbo pump, two sets Babcock-Wilcox boilers of 267-H. P. and 350-H. P. Also small lot of pipe fittings 16-inch, 14-inch and small sizes. Address C. A. Riley, Box 703, Galveston, Texas.

FOR SALE—Several gas engines and compressors. All makes and sizes. Electric plants, both D. C. and A. C.; four drilling machines. R. W. Russell. St. Marys, W. Va.

FOR SALE—REFINERIES

FOR SALE
Controlling interest in a company owning 600 bbls. of daily production and a large amount of proven acreage; a 2,500-bbl. refining plant with ample crude supply within 5 miles; excellent pipe line facilities; plant located on M. K. & T. and Rock Island railroads and in Group 3; local market for 60 per cent of sales and offering splendid territory for own service stations. Company is well established and operating at plant capacity. Wonderful proposition for merger or nucleus for new company. This interest can be bought immediately at a great sacrifice. Address Box A-252, care The Oil and Gas Journal, Tulsa, Okla.

FINANCIAL

INVESTORS—You will find good opportunities listed under leases and production. Read every advertisement.

CAPITAL—Eastern and Canadian can be quickly reached through brokers, bank managers and salesmen; valuable information upon request. Amster Leonard, First National Bank Bldg., Chicago, Ill.

POSITION WANTED

POSITION WANTED in Montana as field representative or in land department and geological work. Thoroughly acquainted with Montana territory which is destined for intensive development in the near future. Highest references. Walter F. Brittan, Poplar, Mont.

WRITE your advertisement, mail it to The Oil and Gas Journal, and it will be placed in the hands of thousands of producers and refiners in all parts of the world. It doesn't cost much.

WANTED AT ONCE—Cleaning out work where I can also pump and look after a lease of about 10 wells. I have had 9 years of this kind of experience. Lock Box 142, Virgil, Kans.

RESPONSIBLE POSITION wanted by civil engineer who has had several years 'oil field experience managing large oil properties. Now employed developing Oklahoma properties, but desires employment in Rocky Mountain States. Excellent references. Address Box A-243, care The Oil and Gas Journal, Tulsa, Okla.

PRACTICAL refinery laboratory man, stillman, treater or any position where ability counts, references. Address Box A-257, care The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

WANTED high class refinery superintendent; one familiar with duties of stillman treater, chemist, connection foreman, to go to Cuba. Apply Victory Petroleum Co., Lexington, Ky.

WANTED

WANTED — 250 investors to put in $100 each to drill well on block of acreage on structure approved by geologists. For further information write owner. Address Box A-280, care The Oil and Gas Journal, Tulsa, Okla.

WANTED—Producing oil company, or individual, in need of capital for further drilling; no wildcat; must stand most rigid investigation; state in first letter if you have geologist report, and whose; leases and royalties if any; give production; who takes it; depth to producing sand, and what strata. Col. B de Mosin, Harwichport, Mass.

BUSINESS OPPORTUNITY

IN READING The Oil and Gas Journal you will be taking the best means possible to keep yourself acquainted with the progresisve developments and changes that are continually going on within the industry.

PANHANDLE, Carson County, Texas, the coming oil city. Trackage, business and residence lots for sale by owner. Fred Horsbrugh, Amarillo, Texas.

COLLECTIONS—No charges unless claim is collected; satisfaction guaranteed. Tulsa Credit Exchange, 305 National Bank Commerce Bldg., Tulsa, Okla. Osage 4272.

ADVERTISING RATES

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7	lines..	1.75	2.80	3.85	4.90
8	lines..	2.00	3.20	4.40	5.60
9	lines..	2.25	3.60	4.95	6.30
10	lines..	2.50	4.00	5.50	7.00

CLASSIFIED WANTS

BUSINESS OPPORTUNITY

SCOUT REPORT, northwest Colorado; weekly, comprehensive scout's reports on Moffat and adjoining counties; $5 per month. Mountain States Oil Digest, Craig, Colo.

CORE DRILL your structure with diamond drills and reduce hazard of wildcatting. Let us help your geologists correlate structure before you put cable tools at work. The cost is relatively small and the possible saving enormous. Drilling Corporation of America, 205 Cosden Bldg., Tulsa, Okla. Phone Osage 8183.

ESTABLISHED producing oil company now arranging large amount new financing will consider propositions to merge or consolidate small companies with producing properties, well located acreage. Reply with full details which will be treated confidential. Address Box A-255, care The Oil and Gas Journal, Tulsa, Okla.

MANUFACTURING BUSINESS

Owner of small new manufacturing plant desires to sell or trade for settled production. Plant will invoice $4,000 building and equipment and around $3,800 in materials. Patent rights on very practical device used on beam pumped wells go with plant. Plenty of ground space for expansion; overhead very low. Plant earned around $1,000 during April and May without advertising. Good and sufficient reason for selling. Address Box 56, Hempolia Station, Fort Worth, Texas.

INCORPORATIONS

DELAWARE incorporator. Charters; fees small; forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

YOU WILL always be right in reading this Classified Section, as it is the best Petroleum Publication Classified Section in the world. It will help you.

FOR SALE—PETS

NEWFOUNDLAND dogs for sale from registered stock at reduced prices. A wonderful playmate for children. Address Box 62, Fort Riley, Kans.

REGISTERED Bull Pups—Bulldog Park, 501 Rockwood, Dallas, Texas.

ALL WHITE and beautifully marked Collie pups. Louise Spoher, Washington Heights White Collie Kennels, Nevada, Missouri.

FOR SALE—MAPS

MAPS showing the "Panhandle of Texas Oil and Gas Territory." Convenient for mailing; prices prepaid; 10 cents each for amounts less than 100; $5.50 per 100 lots and special price on larger orders. G. C. Davis, Box 368, Amarillo, Texas.

FROM NOW ON, when I want to do business with the real men of the petroleum industry, I'm going to put my advertisement right here in this Classified Wants Section.

MAILING LISTS

STOCKHOLDERS

I have the stockholders' names in over 1,000 companies. Ask for price list, showing names of company and number and price of names.

A. F. WILLIAMS
Established 1880 166 W. Adams St.
Chicago, Ill.

STANDARD FORMS

CONSUMERS' LEDGERS

We are prepared to furnish from stock standard forms of Gas Meter Consumers Ledgers. Sample forms and quotations on request. First class material and workmanship.

DERRICK PUBLISHING CO.
Oil City, Penn.

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township plats, gauge books, run tickets, time books, well records, etc. Request on your letterhead gets free catalogue. Olds Press, 215 East Third St., Tulsa, Okla.

FROM NOW ON, when I want to do business with the real men of the petroleum industry, I'm going to put my advertisement right here in this Classified Wants Section.

OKLAHOMA FIELDS

(Continued from Page 115)

at 2,365-89 feet. The Schermerhorn Oil Co. had a rig up for its No. 1 McGill, C NW NE SE, Section 8-3s-2w.

In Murray County, the Cornhuskers Oil Co.'s No. 1 Low, NW cor. SW, Section 16-1n-2e, was dry and abandoned at 2,640 feet.

A Coal County test did not get down very far. McPherson and others abandoned their No. 1 Jamison, CNL NE SW, Section 24-1n-8e, at 300 feet.

Johnson County enthusiasts were also disappointed when Mitchell and others abandoned the rig for their No. 1, SE cor. SW, Section 29-4s-5e.

In southern Atoka County, Ed Hansen and others' No. 1 Dabney, C SE NW, Section 17-4s-11e, was shut down at 1,154 feet.

In Love County, the Simms Petroleum Co. had a rig up for its No. 1-A Starret, C NE SE NE, Section 29-6s-3e.

In Jefferson County, Clark & Cowden abandoned their No. 1 Seay, SW cor. SE NW, Section 34-6s-5w, as dry at 1,500 feet. Couch & Jones had a rig in place for their No. 1 Seay, NE cor. NW, Section 4-7s-5w. The Sutherland Oil Co. was spudding its No. 1 Reed, CNL NE NW, Section 19-7s-5w. The Humble Oil & Refining Co. was drilling at 200 feet in its No. 1 Seay, NE cor. NW SE, Section 1-7s-6w.

In southern Cotton County, Fisher and others were building a rig for their No. 1 Day, C SW NW, Section 13-5s-13w. G. C. Woods was drilling his No. 1, SE cor. SW SE, Section 22-5s-12w, at 800 feet.

In Jefferson Count,, the Hambro Oil Co.'s No. 1-A Seay, SE cor. NE SE, Section 33-6s-5w, was making 120 bbls. from broken sands at 1,303-74 feet. The same company had a rig up for its No. 2 Seay, CSL NE SE, same section, and the Prairie Oil & Gas Co. had a machine in place for its No. 1 Seay, SW cor. NW SW, Section 34-6s-5w.

Storage in Transit Plea to Interstate Board by W. P. R. A.

The Western Petroleum Refiners' Association has filed a complaint with the Interstate Commerce Commission requesting a storage-in-transit privilege on iron and steel pipe and fittings at St. Louis, Mo., and protection for the through rate from the point of origin to final destination, plus a reasonable storage-in-transit charge.

It is the position of the association that the maintenance of a storage-in-transit yard at St. Louis will obviate back hauls in inter-field movement and that it also will expedite shipments, particularly during periods of car shortage and congestion. The association contends that it is the only economically sound basis for handling this material due to the special nature of the oil producing industry.

Securing a storage-in-transit privilege at St. Louis will do away with the necessity for carrying large stocks and assortments of pipe in the field distributing yards among the various producing areas of the Southwest. At present large supplies are maintained in adjacent fields and many pipe yards are kept up where the demand is small. A direct shipment from a St. Louis yard to destination would do away with much duplication of effort in pipe distribution and would do away with back hauls, necessitated by shipping pipe to the destination in some large yard and re-shipping at a later date to the consumer.

The association has been joined in this complaint by the Association of Natural Gasoline Manufacturers, the Mid-Continent Oil & Gas Association, Jones & Laughlin Steel Corp. of Pittsburgh, Purchasing Agents' Association of Tulsa, Frick-Reid Supply Co. of Tulsa, Interstate Pipe Co. of Pittsburgh, the International Supply Co. of Tulsa, Superior Tube Co. of Kansas City and Spang, Chalfant & Co. of St. Louis, Mo.

Filing of the complaint with the Interstate Commerce Commission comes as the result of the disapproval of the application of the Western Petroleum Refiners' Association and numerous other oil companies and associations when it was brought before the Southwestern Freight Bureau in St. Louis, on September 27, 1923. At that time some of the carriers were favorably inclined to granting a storage-in-transit privilege at St. Louis, but others were not. As a result of the refusal of the carriers to grant the request, the oil companies and associations are making their appeal to the Interstate Commerce Commission, in the hopes of obtaining relief which will save them a huge sum annually in freight on oil country pipe and fittings, expedite shipments, do away with duplicate stock investments and give greater economy in many other respects.

Cromwell Property Reported Sold for About Two Millions

The producing properties and leases of the Cromwell Oil & Gas Co. and J. I. Cromwell, in Township 10-8, Seminole County, Oklahoma, a part of the new Cromwell Field, were reported sold recently to the Carter Oil Co. for a sum said to be about $2,000,000. Actual transfer of the properties was understood to be awaiting only a small amount of title work. Reports indicated that half of the purchase price was to be paid in cash and the remainder in oil from the leases.

Present production from the properties of J. I. Cromwell, discoverer of the Cromwell Field, comes from three wells which made a daily average output of 2,687 bbls. for the past week. Approximately 800 acres additional in leases in Township 10-8 are included in the transfer. These leases are regarded as some of the most desirable prospective territory in the area. Most of the acreage is owned entirely by Mr. Cromwell, but he has only a one-half interest with the Gardner Petroleum Co. in the east half of the southwest quarter of Section 9-10-8, and a one-half interest with the Tidal Oil Co. on the east half of the northwest quarter of Section 14-10-8.

Other close-in acreage involved in the sale includes 140 acres in the northwest quarter of Section 9-10-8, the northwest quarter of the northeast quarter of the same section, and 60 acres in the south half of the northwest of Section 16-10-8.

Two producing wells in the northeast quarter of the southwest quarter of Section 15-10-8, and one producing well and three drilling wells in the northeast quarter of the northeast quarter of Section 16-10-8, supplied the production on the properties sold. Mr. Cromwell is said to own royalty interests on approximately 600 acres of land in the heart of the Cromwell Pool, in addition to the leases involved in the sale to the Carter Oil Co. He retains his royalty interests.

Representatives of the Carter Co. were reported on the ground at the Cromwell producing properties Tuesday taking a gauge on the wells prior to closing the deal with Mr. Cromwell.

OIL MEN'S ASSOCIATION CONVENTION AT WICHITA

(Continued from Page 23)

dicted a famine in either crude or gasoline but said that gasoline consumers would probably have to pay more in the future than they have in the immediate past with a more equal distribution of profits between all branches of the industry.

In speaking of present conditions in the oil business he said that conditions in regard to the gasoline market at the refinery had started to improve during the past few days and he thought this situation would continue over the balance of the year. He said this improvement in the refinery situation would probably avert any general reductions in the crude and tank wagon prices.

Support for Associations

In concluding his talk, Mr. Pielsticker digressed from his main subject and made a plea for more general support of the smaller associations of the oil industry. He said his experience has lead him to believe that the associations covering a small area could accomplish more for its membership and the entire industry than the national or other large organizations which were handicapped due to the diversity of interests among their membership. He said that the smaller organizations cooperating with the larger organizations could be made strong enough so they could act as regulatory bodies responsible both to the industry and the consuming public.

Gasoline "Dopes"

There was considerable discussion during the Friday afternoon session as to the place of the so-called gasoline "dopes" in the marketing of gasoline. C. L. Henderson, of the Vickers Petroleum Co. of this city, made a report of investigations he had conducted covering many of the commercial products now offered the independent jobbing interests which claim to add to the value of gasoline, and which are being sold in the States of the Middle West in competition with ethyl gas sold by the Standard Oil Co. of Indiana. Mr. Henderson and other speakers recommended the policy of "watchful waiting" in regard to these dopes. As far as Kansas is concerned, according to the speakers, ethyl gas has not yet proven serious competition. Mr. Henderson said that beginning July 1, the Bureau of Mines would be in a position to make tests of these dopes and he recommended that samples be submitted to the Government bureau before purchase in large quantities.

E. W. Fawcett of the Independent Lubricating Co., Topeka, Kans., spoke on the refining and compounding of lubricating oils. His talk was technical, covering in detail the process of manufacture and the meaning and importance of the terms covering specifications and tests. In the discussion which followed his talk, R. W. Anderson of the Andrice Oil Co., Erie, Kans., advocated a campaign of education among jobbers so as to enable them to compete more effectively in the sale of lubricating oils with the highly advertised brands sold by the larger companies.

Friday Morning

E. S. Rule of Wichita, Kans., president of the association, presided at the opening session Friday morning. After an address of welcome by Floris Naglevoort, president of the Wichita Chamber of Commerce, the remainder of the session was devoted to reports of committees and officers.

The report of A. W. Long of Manhattan, Kans., treasurer, showed that the association had increased its membership from 45 to 130 during the past year. The association has the further distinction of having a substantial balance in the treasury at the present time. J. A. Mother, secretary, was given credit for much of the association's growth during the past year.

C. L. Henderson, chairman of the legislative committee, said that the association was aiding in the fight to prevent an amendment to the State Constitution which would permit the enactment of a gasoline tax in the State. The amendment is to be voted on in the fall election. A 2-cent tax is advocated in the State provided the constitutional amendment is approved by the voters.

BUYS MILWAUKEE SITES

CHICAGO, Ill., June 23.—The Standard Oil Co. of Indiana will spend $1,000,000 in improvements to its properties in the Milwaukee district, according to reports here. It has purchased 15 filling station sites and will build a three-story office building and warehouse.

Larkin Improved Sand Pump

(PATENTED)

This illustration is the famous Larkin Sand Pump which is found in every oil field throughout the world.

Besides a full line of Drilling and Fishing Tools and Packers of all kinds and sizes, we manufacture the LARKIN Patent Never Slip Pipe Grip, which does away with the old-fashioned way of putting in casing with rope and tongs, and is less expensive, more durable and more easily handled.

LARKIN & CO.

Butler, Pa., U. S. A.

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BOLT AND NUT PRODUCTS

Your supply house can furnish a variety of SHEFFIELD-QUALITY bolt and Nut Products.

More than thirty years of skilled experience in bolt and nut plant operation are back of these products. A definite high quality is built into them; the steel used is made in our own Open Hearth Furnaces; careful manufacture assures you of the most **dependable** items when you specify Sheffield-made bolt and nut products.

Our manufacturing facilities and our large stocks make it possible for your supply house to give you **promptest service.**

Specify Sheffield-made Bolt and Nut Products to your supply house.

With These Advantages:

1. **High uniform quality, manufactured by a company thirty years in business.**

2. **From steel made in our own Open Hearth Furnaces in Kansas City.**

3. **A complete line of Bolt and Nut Products—large stocks and unsurpassed production facilities insure** *prompt service.*

The Kansas City Bolt & Nut Company

SHEFFIELD STEEL MILLS

Sheffield Station **Kansas City, Mo.**

PRODUCTS

Machine Bolts
Carriage Bolts
Still Bolts
Track Bolts
Track Head Coupling Bolts
Lag Screws
USS Hot Pressed Nuts

Sheffield-made

Steel

PRODUCTS

Rivets
Pull Rods
Sucker Rods
Threaded Rods (plain and upset)
Oil Well Forgings

QUESTION OF FAIR RATES DOMINANT IN GAS CIRCLES

(Continued from Page 58)

from being abandoned in a destructive manner, merely to lessen an expense which in many cases is negligible, compared with the lasting benefit to be obtained from the use of correct methods. At a time when we are being every effort to save gas by the thousand feet in pipe lines, it seems to me we need very much to use equal care not to waste it by the million feet in the ground.

I have already remarked on the fact, known to you all, that the natural gas industry is entering upon an era, not of decline but of transition. There should be nothing surprising or alarming to us in the fact that the reserves of natural gas in the United States were bound to have a limit, no matter how remote that limit might at one time have seemed to be. And depletion of those reserves, however steadily it may be progressing, has by no means gone so far that there is not ample time available, for those natural gas companies which have used adequate prudence and foresight in the management of their properties, to take the steps, which it is already clear, the situation will require.

First of those steps, in my opinion, is the education of the public, in all communities which we serve, to a realization of the facts of the situation as they are known to us. We cannot hope to pass successfully through the period of transition without public support, and public support can only be gained and held by thorough education of our communities on the inevitable increase in the cost of service which changing conditions will entail.

We must remember that the lack of public appreciation of the value of natural gas was responsible for the great waste in the past which brought about the early depletion of many once valuable fields. It is doubtful if, even today, any great proportion of the lay public appreciates the true cost of natural gas service, involving such elements as the necessary provision of sufficient reserve acreage for the protection of any field against competitive withdrawals and the maintenance of production on the scale necessary today for any large community.

We must keep constantly in mind for ourselves, and we must be unwearying in our efforts to bring it home to the public, that true conservation of this great natural resource does not consist merely in hoarding our dwindling supply, but in its economical and efficient use in the manner best suited to secure to the greatest number for the longest possible period, the fullest measure of benefit.

IMPROVE INSTRUMENTS FOR OIL INDUSTRY USE

"The eyes of your plant," is the expression used by the Foxboro Co., Inc., of Foxboro, Mass., in setting forth the benefits of Foxboro instruments in connection with power equipment, refinery work, natural gasoline plant operation and in many other lines of endeavor allied with the oil industry. The Foxboro improved helical tube movement gives the precision instruments made by this company accuracy and strength.

"These recording and indicating instruments for temperature pressure and humidity enjoy a universal reputation for accuracy and dependability under all conditions of service," according to a statement in a recent leaflet, which says they rest on "thirty years of experience in instrument design, the finest of raw materials, craftmanship of skilled artisans and a carefully developed series of tests which every instrument must pass."

ELECTRIC WELDED OIL BARGE

A barge being built for the Pennsylvania Petroleum Products Co. is the first vessel of electrically welded steel ever built in the United States. It is a steel barge 80 feet long and in its entire hull not a rivet or bolt will be used.

A Monkey Wrench to be Proud of

Steel Handle—7 Sizes, 6 to 24 ins.
Knife Handle—4 Sizes, 6 to 12 ins.

When you own a TRIMO Monkey Wrench you have the satisfaction of knowing that yours is as fine a wrench as ever was made.

Not a casting in it. Stationary jaw and handle drop-forged in one piece. Powerful pressed steel frame welded to handle. Threads of jaw and nut rounded, making them practically indestructible. Nut guards keep adjustment permanent when working in close quarters.

If you use a monkey wrench long and hard you'll save time, trouble and expense by getting a TRIMO. Your dealer has them.

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Roxbury, Mass.

TRIMO

Gets the Lower Valve Every Time

—and pays for itself every time you use it!

The new, guaranteed Norris Clutch Type Valve Puller never fails. Moderately priced and quickly installed, it is always ready to do its work. A few turns of the rods and the lower valve comes up with the rest of the equipment. A complete run of the rods, in and out, is saved.

Every time you use the Norris Valve Puller, its cost is repaid to you. Every time you pull lower valves without it, you miss a chance to get it free of charge.

In addition to its pulling ability, the Norris has large, solid valve bumping space—alone worth the cost.

Let us send you a Norris Valve Puller to try in your own work. If it doesn't meet our claims in every way, return it and the price will be refunded. Guaranteed by a company known for 17 years for square dealing and quality products. At your supply house or direct.

Manufactured by

NORRIS BROS., Inc.

Manufacturers of Oil Well Pumping Equipment

Robinson, Ill.

NORRIS

Clutch Type

STANDING VALVE PULLER

131

Standard Oil Group Makes Good Showing In Current Quarter

The companies composing the Standard Oil group will make an excellent showing in dividend payments in the current quarter. Cash payments for the quarter will aggregate $40,699,592, comparing with $34,975,867 in the first quarter of the year and with $36 311,251 paid out in the corresponding quarter last year. The largest dividend total for any one quarter was $55.652,423 in the first quarter of 1913, but that was due primarily to the dividend of $39,335.352 paid by the old Standard Oil Co. of New Jersey and represented repayment of loans received from former subsidiary companies.

"Cash distributions by the Standard Oil group of companies for the second quarter of 1924 total $40.699 592, of which $4 319,525 represents preferred dividend payments," says a summary by C. H. Pforzheimer & Co., specialists in Standard Oil stocks. "This is the largest total to be distributed in preferred and common dividends since the dissolution for any quarterly period in which there were no extraordinary disbursements and was exceeded only in two previous quarters, namely, in the first quarter of 1913, when Standard Oil Co. of New Jersey made an extra distribution of $39,335,352, and the last quarter of 1922, when four of the eastern pipe line companies made an aggregate disbursement of $11,600,000 in addition to their regular quarterly dividends. In addition, there was paid out $4.666.280, representing semi-annual disbursements.

"The Standard Oil Co. of New Jersey, as usual, leads the dividend payers with a total disbursement of $8 520 525, of which $3,499.525 goes to preferred stockholders and $5,021,0000 to common stockholders. Three of the company's subsidiaries, in which the public has a stock interest, are also among the big dividend payers, namely, Humble Oil & Refining Co. $525,000; Imperial Oil, Ltd., $1.176,682, and International Petroleum, Ltd., $1.779.534.

"Standard Oil Co. of Indiana makes the largest common stock distribution with $5,542,666, and Standard Oil Co. of California is paying $4.674 086 to common stockholders and $625,000 to its bondholders, while the Standard Oil Co. of New York is paying out $4,854,545 at the half year, of which $3.154.545 goes to the common stockholders and $1,700,000 to the bondholders.

"Vacuum Oil Co.'s quarterly disbursement has risen to $1,845,692 and Ohio Oil Co.'s shareholders are receiving $1,200,000 on June 30, against $600.000 on March 31. Anglo-American Oil Co.'s semi-annual disbursement at the increased rate of 55 cents a share, making a total of $1,650,000, helps toward the record-breaking distribution."

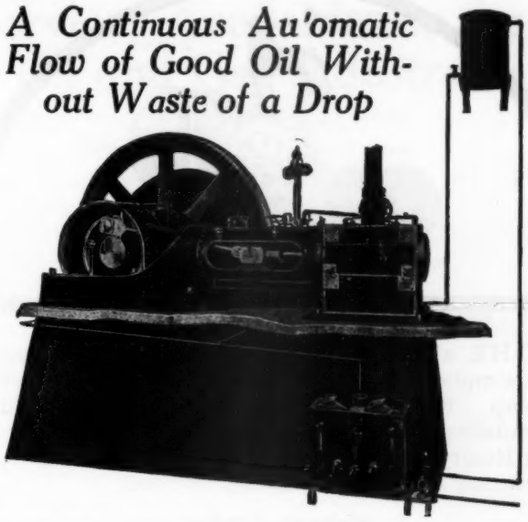
Cash disbursements by quarters since the dissolution of the old Standard Oil Co. of New Jersey in 1911 have been approximately as follows:

	Quarter Ended June 30	Quarter Ended April 30
1924	$34,975,867	$40,699,592
1923	33,499,988	36,311,251
1922	28,206,068	29,206,349
1921	28,966,611	29,131,727
1920	26.796,606	27,313,396
1919	26,759,502	26,397,119
1918	26,483,747	26,757,002
1917	23,097,668	26,428,252
1616	22,179,085	†30,406,454
1915	15,241,966	14,368,636
1914	17,904,636	16,426,306
1913	‡55,652,423	15,552,096
1912	10,220.396	11,983,746

	Quarter Ended Sept. 30	Quarter Ended Dec. 31	Year's Total
1923	$31,066,251	$37,545,805	$138,423,295
1922	28 628,099	*43,000,349	129,039,865
1921	27,609,227	29 586.727	115,294,292
1920	29.804,557	31,861,824	115,776,793
1919	24,418,169	28.326,687	105,901,477
1918	26.204,915	24,035.252	103,480,916
1917	22,968,751	27,463,252	99,957,923
1916	21,980,168	24,062,168	98 627,875
1915	15,891,966	16,898,636	63,401,204
1914	14.430,626	14,931,306	62,692,884
1913	15.213,746	21.377,096	107,796,361
1912	13,190,396	16,392,096	51,686,634

*Includes aggregate extra disbursements of $11,600,000 by four eastern pipe line companies. †Includes $6,613,786 disbursed by Nat onal Transit Co. in adjustment of capitalization. ‡Includes $39,335,352 disbursed by Standard Oil Co. of New Jersey from repayment of loans to former subsidiaries.

A Continuous Au'omatic Flow of Good Oil Without Waste of a Drop



Any engineer will agree that good lubricants, and plenty of them, improve the operation of machinery, cut down repair bills and give years of added life.

To use the **best** oils, however, and to use them just as freely as the bearings will receive them, is expensive—unless there is a Burt Oiling System on the job. In that case it is actually cheaper to keep up a steady flow of highest grade lubricants than to maintain a scanty flow of mediocre oils without a Burt System.

BURT COMPLETE OILING AND FILTERING SYSTEMS

include a reservoir for pure oil, leading by gravity to the working parts of the machinery. Passing thru the bearings, the oil is piped to a Burt Filter, made exactly the same as new, and pumped to the pure oil reservoir. The best lubricants may be used and a saving of 50% to 90% in oil bills effected at the same time.

The largest engineering department of its kind in the world is ready to submit recommendations for handling your oil problem in the most efficient and least expensive way.

Sent on 30 days trial subject to approval.

THE BURT MANUFACTURING COMPANY
929 Main St., Akron, Ohio

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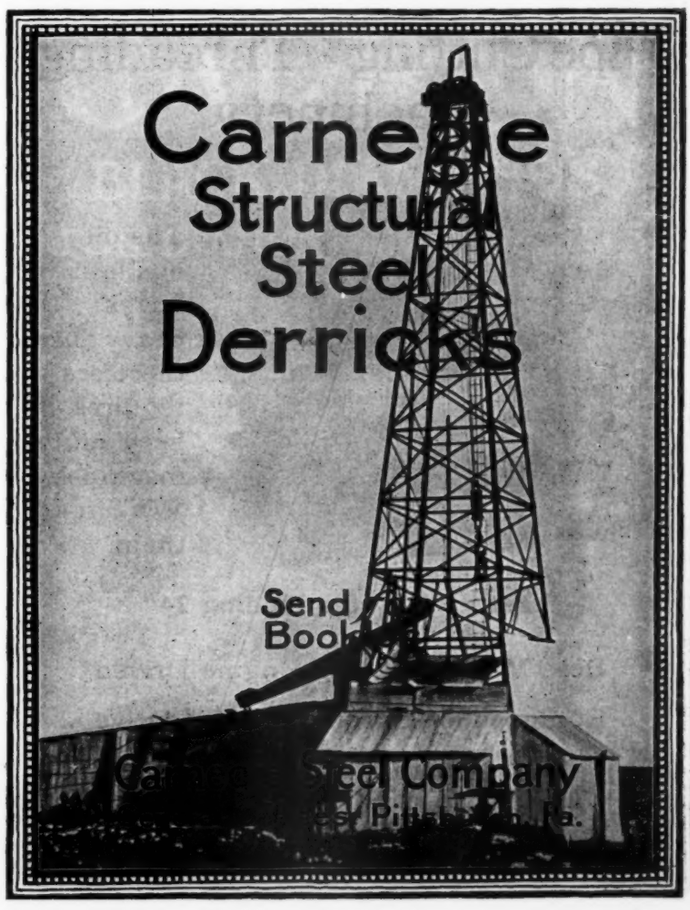

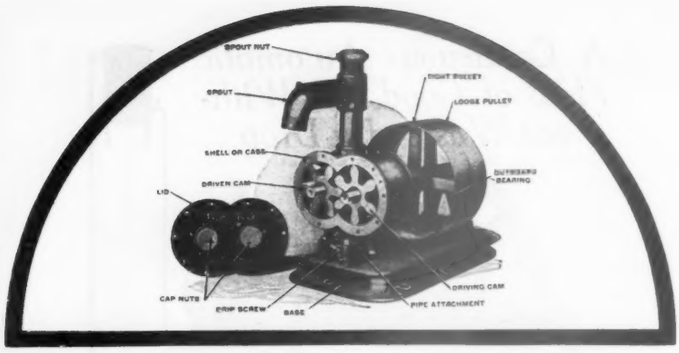

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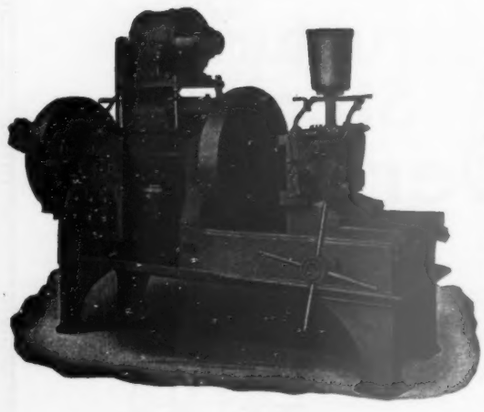
San Antonio Mach. & Supply Co., San Antonio, Texas

Deming PUMPS

Pipe Cutting and Threading Machinery



The oil business is one of heavy duty therefore requires heavy duty machines. We have them.

Sizes up to and including 24"

Belt, Motor or Steam Engine Driven
Also
Equipped for Gasoline Engine Drive

THE COX & SONS COMPANY
BRIDGETON, NEW JERSEY
Business Established 1868

Bill Altering Mine Law in Rumania Is Held Up Until Fall

DUSSELDORF, Germany, June 12.—According to reports from our Bukarest correspondent, the bill concerning the alteration of the existing Rumanian mine law has been postponed by Parliament until the sessions to take place in autumn. The Minister of the Finances, Mr. Vintila Bratianu, has approved of this adjournment on account of the claims made by various private undertakings in the oil industry. Mr. Bratianu proposes the appointment of a new commission containing also representatives of such companies that might by part or fully work with foreign capital. It will be the task of this new commission to adequately balance the private claims and the State's interests in this matter.

The oil industry of Rumania is going more and more under the Rumanian Refineries, which is a company quite recently established is said to be going to be converted within short time into a permanent Rumanian petroleum concern with the Rumanian Government to hold the major part of the capital. This new concern will embrace all companies in the country as far as they are in their main part representing native capital, thus forming a potent block of native industrialists to face foreign companies. The necessary monetary transactions will be executed by the well-known Banca Romaneasca which probably will in this instance enjoy also the support of the Banca Generala.

According to an ordinance of the Rumanian Government the oil products' trade will be permitted in future with the following restrictions: The exportation of crude oil and residuals remains prohibited. The export tax both for heavy and light products is advanced from Lei—, 56 to Lei—, 80 per kilo. The oil undertakings are expected to communicate with the administration of railways and water transportation companies in order to insure full delivery of their requirements.

CHAIN BELT CO. NEW OFFICES

J. C. Merwin, works manager of the Chain Belt Co., Milwaukee, was elected second vice president at the annual meeting of the company held in Milwaukee. Mr. Merwin is a graduate of Sheffield Scientific School, Yale University (1910), and has been associated with the company since 1917. Other new officers elected were Brinton Welser as secretary, and C. E. Stone assistant secretary. Mr. Welser is a graduate of the University of Wisconsin (1912) and has been with the Chain Belt Co. in various capacities ever since. Mr. Stone is assistant to the president, and has also been purchasing agent since 1918. He is a graduate of the University of Michigan (1910). The officers re-elected were C. R. Messinger, president; Clifford F. Messinger, first vice president; C. L. Pfeifer, treasurer. Chain Belt Co. is one of the leading manufacturers of power transmission chains, conveyers, traveling water screens and concrete mixers, allof which are marketed under the trade name Rex.

MILLION-DOLLAR OIL TERMINAL

A 67-acre tract of land in the Curtis Bay section, one of Baltimore's industriai districts, will be utilized for a $1,000,000 oil terminal by James H. Foster, of Cleveland, and associates, who have organized the Baltimore Terminal Co. as a holding corporation and will form the Seaboard Terminals Corp. as an operating company. The initial unit will cost $150,000 and others to be built by the end of the year will increase the expenditure to $500,000. The remainder of the plant will be constructed later. The general construction contract awarded to the Sanford & Brooks Co., covers piers, wharves, lubricating oil factory, etc. The company plans call for monthly shipments of about 2,000 carloads of oil.

"Be Square Products"

Pioneers in the manufacture of High Grade Uniform Quality Western Cylinder Stocks known all over the world as

BIGHEART CYLINDER STOCKS

Bright Stock
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Barnsdall Refining Company
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There are three definite reasons why

"PALMETTO"

outlasts other packings even under hard conditions:

FIRST:

"Palmetto" is made up in a layer upon layer construction, which gives it great tensile strength.

SECOND:

It has graphite grease lubricant forced hot into each single strand before braiding, and not dipped into lubricant after braiding, as other packings.

THIRD:

The long fiber asbestos of which it is made gives each single strand great tensile strength. Test a strand yourself.

Let us prove "Palmetto's" long life in service with working samples—no charge.

GREENE, TWEED & CO.
Sole Manufacturers
109 Duane St.
NEW YORK

3

PRODUCER IN GERMANY MAKING 60 TO 70 TONS

DUSSELDORF, Germany, June 12.—A visitor to the oilwell of the D. E. A. near Nienhagen, Germany, after having closely inspected the drilling spot and the well itself declared that the actual production of the well is from 60 to 70 tons a day and that it is obtained by way of bailing, in a rather primitive manner.

The well is situated close to the siding of the kali-mine "Neidersachsen" in some 3,000 meters distance from the railway station Obershagen. Bailing is being done from a depth of about 90 meters. Weak spontaneous outbreaks are still to be observed once or twice a week. The "oil-lakes," which had gathered within the walls hastily thrown up in the moment the first gushes occurred are now pumped empty. To displace them, a number of square, open air reservoirs have now been built, others are not yet completed. Filling of the tank wagons can be done direct from the reservoirs as the tank wagons are approaching the drilling spot on the siding of the before mentioned Neidersachsen mine. It will not be necessary, consequently, to lay a pipe line anywhere around this well although rumors are current that a pipe line must be proposed. As the visitor has been assured on the drilling spot building a pipe line will be perfectly out of question.

RUMANIAN OIL LAWS NOT SO RESTRICTIVE

WASHINGTON, D. C., July 21.—Cable dispatches concerning future alien property right in Rumania, especially with reference to oil concessions, have somewhat been misinterpreted in this country, according to Rumanian Legation officials. The legislation is still pending in the Rumanian Parliament and discussion of its many provisions, they say, has doubtless led to a misunderstanding of the bill.

Cablegrams from Bucharest would indicate that private ownership in Rumania is a thing of the past. This is not true, according to the Legation, which declares the entire matter has been excited because of an effort on the part of the Government to unify all laws in the country governing mining rights and the operations of various companies having oil concessions in Rumania. Before the war it is pointed out, Rumanian laws applied but to a part of the nation as now comprised, in that much territory was annexed in which mining laws covering oil operations were definite. The move in Parliament now is to unify these laws and does not propose to restrict those oil companies which are now operating there, except that if made a law it will prevent, after a five-year period, expansion of operations into new territory unless certain provisions of the proposed bill are complied with.

SPECIAL TRAIN TO SALE

A special train will be operated by the Midland Valley Railroad Co. from Tulsa to Pawhuska, Okla., next Monday for the purpose of accommodating oil men and others attending the sale of Osage leases. The train will leave Tulsa at 7:30 a. m., making all stops on flag on the going trip to take on passengers and leaving Pawhuska promptly after the sale is concluded, making all stops on the return trip to discharge passengers at intermediate points.

OIL STORAGE ON DANUBE

European advices state there is now on the banks of the Danube in the Vienna district storage capable of accommodating 24,000 tons of petroleum, and the doubling of this capacity is now under consideration. The city, already of considerable importance for the petroleum trade, will on the completion of these extensions, be one of the largest oil markets in Central Europe.

Services Available for the Oil and Gas Industry as—

CONSULTING ENGINEERS in all matters pertaining to:
Pipe Line Transportation of Petroleum and Natural Gas.
Recovery of Gasoline by Absorption or Compression.
Compressing and Booster Plants.
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CONSTRUCTING ENGINEERS and CONTRACTORS, specializing in:
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No Contract too large to complete with satisfaction and dispatch or too far away to handle.

MANUFACTURERS and DISTRIBUTORS of Gas and Oil Specialties, including:
Heat Exchangers.
Gasoline Recovery Equipment.
Compressing and Booster Station Equipment.
Reeves Vertical Gas Engines and Compressors.
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DIAMOND POINTED TOOLS FOR ALL MECHANICAL PURPOSES

OUR TESTED CARBON WILL KEEP YOU OUT OF DIFFICULTY

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NO. 10 HAND LANTERN

$2.75 Complete Less Batteries

A High Powered Low Priced, Dependable Light

Absolutely fire and explosion proof.
Gives three times more light than a good Flashlight—on duty continuously by the hour.
Of sturdy construction—built to stand hard knocks.
Uses two ordinary dry-cell batteries, lasting from 6 months to a year. At your supply house, or sent direct for $2.75 less batteries.

Delta Electric Company

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Standard Makers of Electric Lanterns, Auto Spotlights, Motorcycle Spotlights, Bicycle Lamps, Radio Head-Phones, Flashlights and Flashlight Batteries

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More Power—Less Vibration

Instant Service

Insist on Lightning Pumping Powers They Are Correct in Design

Husky Enough to Do the Job Right

The reliable eccentric motion does away with jerky lines.
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Surplus in Refining Said to Be Cause of Petroleum Troubles

By N. O. Fanning

NEW YORK, June 16. — It is the opinion of some oil executives at least that the troubles of the petroleum industry do not always originate with the wildcatter or the driller. The fact that there are refineries in the United States with an aggregate capacity of 3,044,790 bbls. daily, or from 1,030,000 to 1,430,000 bbls. in excess of actual consumption, depending upon the season, is also cited as representing a drawback to oil prosperity.

The Oil and Gas Journal's survey of oil refining capacity as of May 1 shows that refining capacity on that date aggregated 3,044,790 bbls. daily. The United States Geological Survey reports deliveries of crude oil (both domestic and imported) during April averaged only 2,000,000 bbls. daily. The United States Bureau of Mines report for April indicates actual deliveries of refined petroleum from refineries to the trade as follows:

	Bbls. Dy.
Gasoline	576,000
Kerosene	194,000
Fuel and gas oil	883,000
Lubricants	77,000
Total	1,730,000

The above total of 1,730,000 bbls. daily represents only the principal products, but on that basis the grand total of consumption was surely not above 2,000,000 bbls. daily during April. This figure tallies closely with the Geological Survey's report of crude deliveries. No matter what way one looks at it, the consumption of oil cannot be brought up to anywhere near the total refining capacity, at least for this year, and perhaps next.

The moral is that there is too much oil refining capacity in the United States. If the surplus capacity were shut down entirely, it would entail a great loss to those who had invested their money in that capacity, but the oil business would come into its own once more. But that will not take place, of course, inasmuch as the tendency will continue to be for nearly every refiner that can possibly do so to opearte his plant. He may have to do so at a loss, but still he will turn out gasoline and fuel oil in the bare hope that something will turn up which will enable him to sell his production at a profit.

Two Eventualities

Only two things can happen, in the opinion of oil men, to correct the situation that exists. Either the oil business will have to wait until consumption rises sufficiently to take up the slack, or the surplus capacity will have to be dismantled to the total loss of the money invested therein.

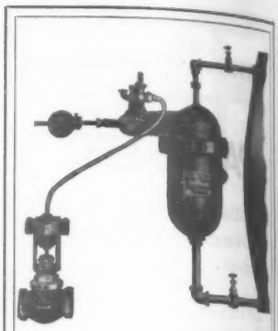
Oil refineries can be placed in two general groups. In the first group are those situated in such a way that both markets and raw materials are handily available. In the second group are those located advantageously from the point of view of either markets or the raw material, but not to both.

The development of oil tank steamer transportation has revolutionized the oil industry in that refineries in the first group, at a long distance from the crude supply, but which can be reached easily by tank steamer, can obtain crude at lower cost than refineries closer to the fields, but which must be supplied with crude by pipe line.

A refinery at New York harbor is within easy reach of the markets, and can get crude by tanker from any field in the world, at the lowest transportation cost possible. A refinery located near a field can get crude at low cost, but as present fields are located, the refined oil must be transported hundreds or thousands of miles to find a good outlet. The advantage is with the refinery at New York.

The uneconomically situated refinery must either sell at a loss or shut down.

The oil business has not yet recovered from the orgy of refinery building which took place in 1919 and 1920. Unfortun-



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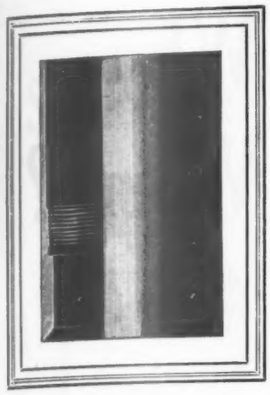

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ately the bulk of the capacity constructed in these years was uneconomically located, as is proved by experience. But since 1920 there has also been an expansion in refining capacity. This expansion, however, represents for the most part additions to the large and well located plants, or refineries built at points in many cases more suited to profitable operation than many of those built in 1919 and 1920.

The successful oil companies are those which have located their refineries properly and have managed their finances conservatively. These two factors have offset many other shortcomings, such as lack of control of crude productions. Many of the big refining companies that do not produce more than 10 per cent or 20 per cent of the crude they use in their plants can nevertheless operate their refineries at a good profit.

Crude vs. Refined Stocks

An overproduction of crude petroleum could be taken care of more easily if there were no overproduction of refined oil for this reason: Under present conditions a big refining company which has large stocks of crude cannot get enough for its gasoline and other products to support these stocks, because of destructive competition from refineries selling products in their territory at a loss.

The writer knows of one big marketing company in this territory which is now meeting destructive competition, and for this reason is shutting down on its crude commitments, having reduced the price of crude. Forced to take less for its gasoline, it cannot afford to carry increased stocks of crude petroleum.

In other words, the condition of over production of refined oil in the Mid-Continent Field is working indirectly to the detriment of the crude producers in that field. If the marketer referred to could ask enough for gasoline, it could well afford to take care of much bigger stocks of crude, and nature would probably help solve the crude problem by means of exhausted oil fields.

Oil and Steel

It is generally agreed that the United States Steel Corp. controls about 60 per cent of the steel business of the country. The largest oil company in the United States controls probably 10 per cent of the markets and 5 per cent of the crude production. Its refining capacity represents about 10 per cent of that of the entire country. The oil business, therefore, is much more competitive than the steel business. Unfortunately, much of the competition is destructive.

Although it may seem radical to say it, the bulk of the destructive competition can be traced back to the operation of uneconomic refineries. For instance, the gasoline which is produced uneconomically is offered at destructive prices. It is sold to service stations run haphazardly and on which the motorist cannot always depend. It is sold at prices below that charged at the well-run service stations. Is this justified?

It might have been thought that the drastic reduction in gasoline prices in 1923 would put many uneconomic refineries out of business. It did, but only temporarily.

CANADIAN PROFESSOR BELIEVES IN ALBERTA

That oil exists in Alberta in commercial quantities and that it is only a matter of discovering it, was the statement recently made by Prof. John A. Allen, geologist of the University of Alberta. He said that oil operations in Alberta were still only in the prospecting stage. Altogether in that province there were, he stated, about 80,000,000 acres of potential oil territory which had to be investigated in order to be proved otherwise.

The principal fields which are being examined now are at Okotoks, Pouce Coupe, Grand Prairie, Birch Lake, and in the Irma, Fabyan and Wainwright district.

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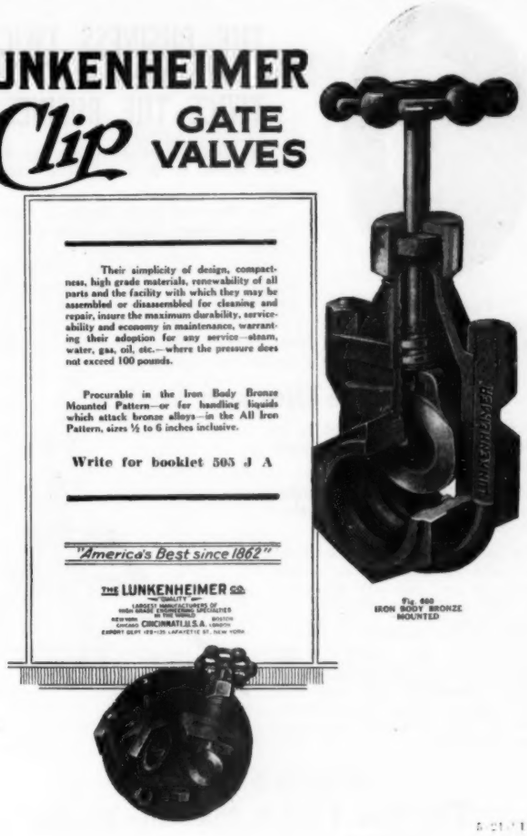
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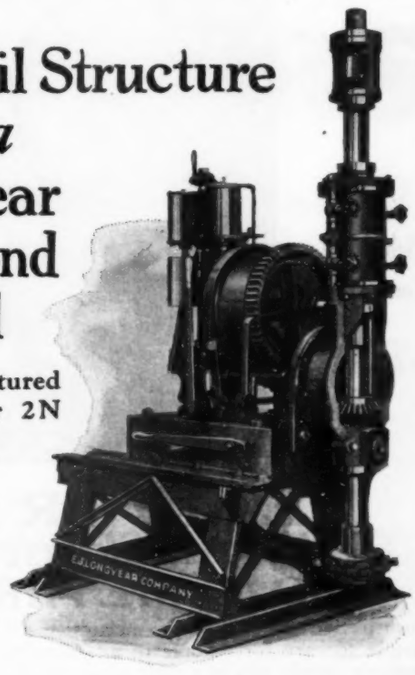

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CHEMICAL STRUCTURE OF AUTOMOBILE ENGINE

(Continued from Page 88)

cepted, then this would lead to the conclusion that detonation might also be efficiently counteracted in a great many other ways, among which one of the most efficient might be expected to be an acceleration of the combustion rendering it more rapid and therefore more complete, because obviously the fuel cannot undergo the two chemical reactions of combustion and decomposition at the same time and one might very well diminish the percentage of decomposed fuel greatly without any specific action on the decomposition itself, but simply by encouraging and promoting the reaction of combustion.

Catalytic Coating

My investigations and research work have led me to the conclusion that by introduction of a proper catalytic coating on the surface of the cylinder head of an internal combustion engine the oxidation of the fuel can be greatly promoted to an extent varying according to the design of the engine, particularly its turbulence, etc., that such a catalytic coating permits the use of appreciably leaner mixtures, leads to better fuel economy and sometimes also greater power output, also diminution of carbon deposition and crank case dilution and other improvements in the performance of the automotive engine, always bearing in mind that the character and extent of this improvement is influenced by other features in the design of the engine and that such a change in the chemical structure of the engine, involving a permanent solid catalytic coating on its cylinder head and sometimes also on other parts of the combustion chamber, although it promotes and accelerates combustion, not only does not induce, but in fact, quite considerably counteracts detonation.

All this is, of course, not intended to be in the least a disparaging criticism of the quite meritorious work done by Mr. Midgley, Dr. Dickinson, and their collaborators, but is simply intended to be a criticism of some of the theoretical views expressed by them at a certain time and which, for all I know, they may have since that time abandoned. It would not be the first time in the history of science that an erroneous theoretical view has been coupled with or even led to important discoveries.

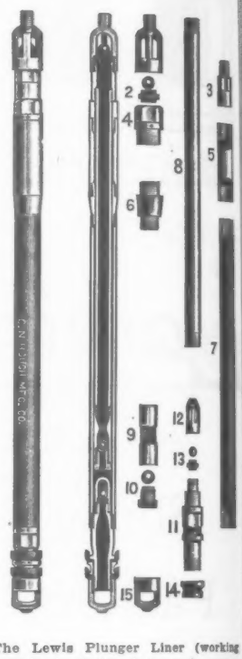
Many years ago, when I was a very young man, I had the privilege of attending a course of lectures given by the great physicist, Herman von Helmholtz. At one of these lectures Helmholtz made a remark which I shall never forget, namely, that in the history of science, quite often great thinkers started from wrong premises and through a wrong reasoning were led to the right conclusions, because it just happened to be that the error in the reasoning balanced the error in the premises.

Accelerating Combustion

If we revert again to the functional chemical requirements of an internal combustion engine, we cannot help to see that an acceleration of the combustion permitting the use of leaner mixtures which now burn too slowly and either cause backfiring or do not give sufficient power and having the other features mentioned by me above would appear to be highly desirable. Although it is a truism that it is pressure and not temperature as such which is wanted in the internal combustion engine, it is often forgotten that a leaner mixture permits us to obtain the same pressure with lower temperatures and correspondingly lower heat losses, and that it permits, as it were, to a certain extent, of an internal cooling of the engine which does not entail any loss of energy as the external cooling obviously does.

In viewing the chemical structure of the internal combustion engine, we must keep in mind that, stating it in an abbreviated manner, we have to get the gases hot because for the same quantity and volume of gas its pressure is a function of the temperature, and at the same time we want to protect the walls of the com-

Why Worry?



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The Oil and Gas Journal

bustion chamber from excessive heat which would cause preignition, interfere with lubrication, and, as has been shown by experience independently of all theories, induce detonation.

English Experiments

It has been proved by experiments made in England that heat reflecting highly polished surfaces of the combustion chamber, as long as they stay polished, have a fairly beneficial effect on power output and fuel economy. The effect of an insulating layer on the inside of the combustion chamber is something with which every automobile driver is acquainted because the carbon deposit is an appreciably worse heat conductor than the metal and therefore gives us a pretty good indication of the effects of heat insulation. Still, it may be surprising to a great many automobile owners that a moderate layer of carbon, particularly in so-called overcooled engines, has a tendency to diminish excessive heat losses and therefore to improve power output and fuel economy until the carbon layer becomes excessive, creates hot spots, and induces detonation, which makes the engine practically inoperative under wide open throttle conditions.

I have not been able to find in the literature any mention of experiments pertaining to the use of substances having a high coefficient of radiation; this question is one which is not easy to analyze theoretically because, while the ratio of absorption to radiation coefficient, according to the well known law of Kirchhof, is, with certain limitations, a function of temperature and independent of the nature of the substance, still the separate values of the two coefficients vary according to the nature of the substance and it is the separate values that we really have to consider because the absorption and the radiation of heat by any such coating applied to the combustion chamber would obviously take place at different temperatures according to whether the temperature of the gases is higher or lower than the temperature of the walls of the combustion chamber.

Coefficient of Radiation

During my work on catalytic coatings applied on the cylinder heads, I have tried to select substances of a high coefficient of radiation because it seemed to me that this physical characteristic would have a tendency to counteract preignition; it would seem plausible that a substance having a high coefficient of radiation would cool off rapidly during that part of the revolutions at which the temperature of the gases is low and therefore such a surface would not be subject to a cumulative rise in temperature and would not likely become incandescent. It is quite possible, moreover, that a coating of a high coefficient of radiation has even a more farreaching effect although this has not been conclusively proven.

You are probably all acquainted with the phenomenon of steam condensation in a steam engine which consists in part of the steam condensing on the cylinder walls of the steam engine when the steam first rushes in, in this way heating the cylinder walls and then being again evaporated when at a different stage of piston motion the temperature of the expanding medium has been lowered below the temperature of a highly heated molecular layer of cylinder walls. This phenomenon, well known to steam engine designers and operators, has nothing to do with the losses of heat derived from the passage of heat through the cylinder walls, but nevertheless it is quite considerable and it permits the heat, as it were, to creep around the piston and to avoid doing useful work. Whether a similar phenomenon occurs in the internal combustion engine is an open question which I would not undertake to decide.

Laboratory Tests

When, several years ago, with the collaboration of Pro. E. H. Leslie of the University of Michigan, I equipped a small laboratory in Ann Arbor and investigated various catalytic agents as to their fitness for the intended application in internal combustion engines, it was

(Continued on Page 130)

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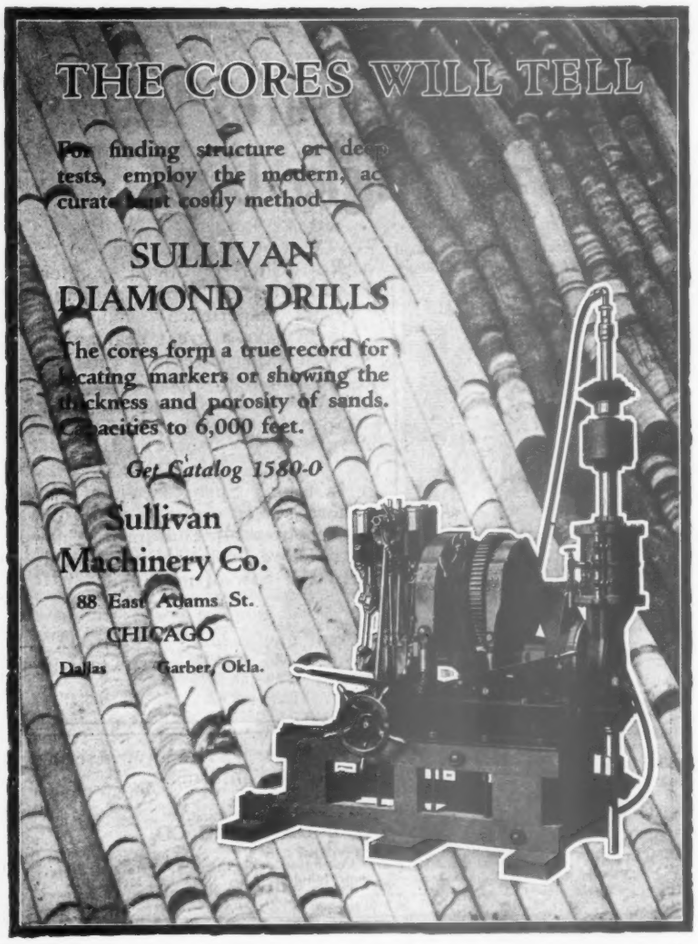
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New Struggle Near For Near East Oil Following Deadlock

The next few months will probably see important negotiations affecting the oil fields of the Near East, says a Paris cable to the New York Times.

European foreign offices are watching for American moves in a struggle in which America has taken little active part since the Lausanne Conference, where there was a great deal of talk about the Chester concession. While the Chester concession is not looked upon seriously here, yet it is not supposed on this side of the Atlantic that Washington has changed its position to the effect that it wants a share in Asia Minor oil.

The Near East oil business has become again involved following the break up of negotiations between the English and the Turks over Mosul. True, American interests have made with British interests an agreement by which the former get a part of what the English get, but the American position is now one of sideline diplomacy, as it was at San Remo, where Millerand and Lloyd George divided up Mesopotamian oil under the nose of our unofficial observer, Ambassador Johnson, without telling him anyth'rg about it.

If the Mosul dispute goes to the League of Nations, as provided in the Lausanne Treaty between the Allies and the Turks, who is going to look out for American interests?

It is understood in Paris diplomatic circles that the recent Constantinople negotiations over Mosul broke up after Sir Percy Cox, the British delegate, demanded for Mosul boundaries much farther north than had been previously claimed. Whether this was done for bargaining purposes alone or for other motives, it has turned French eyes to the situation. For, in addition to their interest in the oil in those regions, the French are concerned over any outcome which may affect their hold on Syria which they administer under a League of Nations mandate.

Commenting on the situation the Temps says:

"Thus continues, despite the defeat of the Greeks in Asia Minor, great projects of conquest which aim to give England all the oil in the Near East."

The Temps says England claims the territory for Irak, and that a new British combination has made a contract with Irak for exploitation of all its oil fields. The Temps also alleges another British group is planning to claim the oil by virture of the rights of Abdul Hamid which they bought from an American company engineered by Samuel Untermyer.

After telling about the British air bombardment of the recalcitrant local leaders of Mesopotamia, the Temps adds:

"This gigantic adventure resembles the conquest of the Transvaal. The oil wells of the Kurd country recall us to the gold fields of South Africa. In South Africa business disturbed the diplomatic balance. We hope the affair of the Near East oil will be settled without such disturbances. But if that is to happen, it must be handled in a spirit of justice and not a spirit of conquest."

DECLARES DEFENSE IGNORED

Declaring the evidence of defense had been ignored and ordering a retrial, the Argentine Federal Court of Appeals has annulled the sentence imposing a fine of $15 000 000 to $20.000.000 on the West India Oil Co., a subsidiary of Standard Oil Co. New Jersey, for alleged evasion of customs duties.

OIL OUTPUT IN PERU INCREASED

The International Petroleum Co., a subsidiary of the Imperial Oil Co. of Canada, which in turn is controlled by the Standard Oil Co., is reported now producing 28,000 bbls. of oil daily in Peru, compared with recent production of 18,000 bbls.

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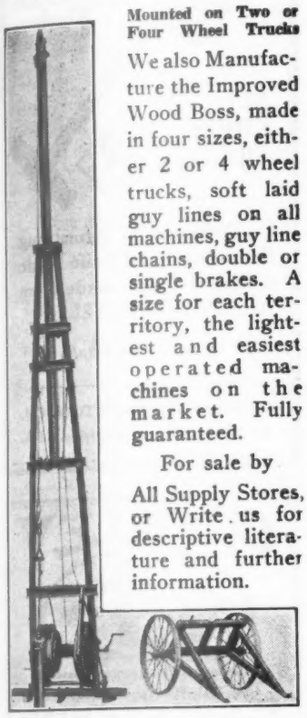

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UNIFY SPECIFICATIONS FOR CAST IRON PIPE

At a recent conference in New York it was decided there should be undertaken a general program of unifying existing specifications for cast iron pipe into a consistent set of nationally recognized specifications.

W. G. Hammerstrom outlined the present practice, not only of organizations who have issued formal specifications, such as the American Water Works Association, the American Gas Association and the American Society for Testing Materials, but indicated the more usual commercial departures from and extensions of these standards. Mr. Hammerstrom also outlined the foreign practice, with particular reference to the work of British, French and German cast iron pipe industries.

After a very thorough discussion agreement was reached on the following scope:

Unification and development of specifications for cast iron pipe, including: materials, dimensions, pressure ratings, methods of manufacture, including such new developments as centrifugal casting, in so far as they may be necessary to secure satisfactory results in preparation of workable specifications; elimination of unnecessary sizes and varieties; consideration of the possibility of developing a coordinated scheme of metallic pipe and fittings applicable to all metallic mediums, (possibly along the lines of the work being carried on in Europe); and methods of making up joints so far as they are determining as to the dimensional design of cast iron pipe.

The types of cast iron pipe under standardization are to include:

a. Flanged pipe.

b. Flanged and bell mouth fittings and wall castings.

c. Pipe elbows, tees, Y's, return bends, and other fittings not now included in standard lists.

d. Cast iron pipe threaded for flanges or couplings.

e. Soil pipe and other light types of cast iron pipe and fittings.

The work will be coordinated with that of the existing sectional committee on pipe flanges and fittings, already well advanced under the sponsorship of the American Society of Mechanical Engineers, the Manufacturers Standardization Society of the Valve and Fittings Industry and the Heating and Piping Contractors National Association.

It was recommended that the work be carried out by a sectional committee under the procedure of the American Engineering Standards Committee, and the joint sponsorship of the American Gas Association, the American Water Works Association and the American Society for Testing Materials, and formal recommendations to this effect were made to the American Engineering Standards Committee which formally ratified the recommendations of the conference, and designated the three organizations named as joint sponsors.

The conference presented a true cross-section of the American Cast Iron Pipe industry—the men present serving as representatives of practically every organization concerned.

BRITISH OIL POLICY

Whether Britain is better off today in her oil prospects than in 1918 is a debatable point, but the difference either way is probably inappreciable, says the London Petroleum Times, which asks: "But having been checked in Mesopotamia, and to some extent threatened with competition by United States interests in Persia, what further steps have British authorities taken to safeguard our interests as to a future oil supply? If any at all have been taken, the secret has been well guarded. At the present moment it looks as if there is no definite oil policy at all, and that the question of future supplies is just allowed to drift."

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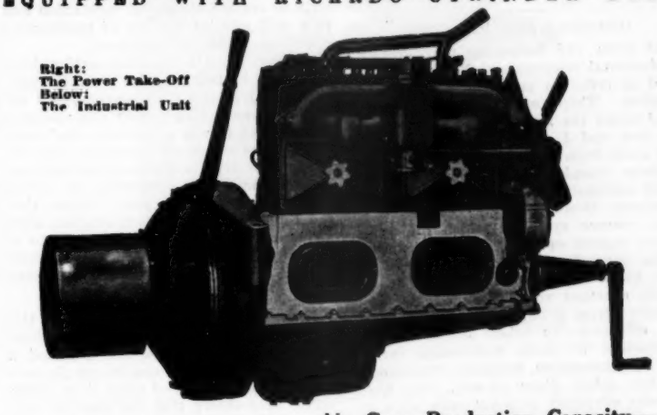
Right:
The Power Take-Off
Below:
The Industrial Unit



Waukesha
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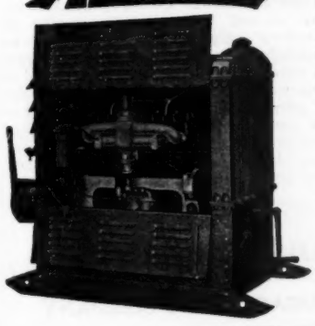

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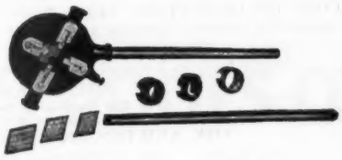

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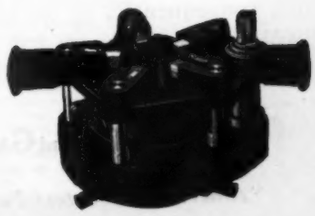

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CHEMICAL STRUCTURE OF AUTOMOBILE ENGINE

(Continued from Page 127)

clear from the beginning that certain fundamental requirements had to be fulfilled in order to make this application possible. There was no doubt in my mind about the fundamental soundess of the idea and I was perfectly convinced that aside from the question of obtaining a more complete combustion, a more rapid combustion as such would be an advantage because in the Otto or constant volume cycle on which all automotive engines operate, the heat transfer to the expanding medium is supposed to take place at constant volume, or as nearly constant volume as possible, any deviation from it implying a loss in thermal efficiency; in other words, a slow combustion is really tantamount to a loss of compression, because, if the combustion takes place slowly, the heat transfer obviously does not take place at the point of maximum compression.

However, there were a great many experimental difficulties to be solved. Besides, the obvious commercial requirements of availability and price, there were the techincal requirements that the material selected had to be of very pronounced catalytic effect in regard to combustion, and at the same time should not catalyze other undesirable reactions, as for instance, cracking and decomposition of the fuel, further than it had to be refractory, nonabrasive, resistant to poison and susceptible of being spread with the use of a suitable binder on the walls of the combustion chamber. This limited the selection of a suitable catalysts to certain classes of substances and to a still smaller number of preferential selections within these classes.

So far, certain metallic oxides have proven to be best adapted for this application. Carefully made experiments extending over a long period demonstrated clearly that it was possible to find catalytic agents which would comply with the abovementioned requirements and still accelerate the rate of combustion of various motor fuels tremendously. From this, the conclusion was drawn at that time, about four years ago, that it ought to be possible to carry out the idea in practice and to obtain the desired improvements.

Tested in Cars

Experience has fully confirmed this conclusion. Observations on several hundred cars, extending now over a period of more than two years, and in certain cars over a service range of more than 20,000 miles, have shown that the effect of such a catalytic coating applied on a combustion chamber of an automotive engine is marked and permanent; no experiments to speak of have been made on other than automotive engines.

The Locomobile Company of America has adopted this catalytic coating as standard equipment on its cars and on carefully conducted road and dynamometer tests extending over a period of nine months and covering a service range of over 10,000 miles have established to its own satisfaction a permanent and considerable improvement in fuel economy, hill climbing, flexibility, and general performance of the car.

As stated before, the character of the improvement obtained varies to a fairly large extent, according to the other characteristics and to the design of the engine. In some engines, which have a large margin of cooling capacity, it has been found possible to increase the maximum power appreciably, but in practically all cases, which came under my observation, it has been possible to duplicate the present optimum performance with a very much leaner mixture. An average of a great many tests shows the attainable fuel economy to be about 20 per cent. The carbon deposit is greatly diminished, rather soft, porous, and scoty, and does not interfere with the catalytic action.

Counteracts Detonation

What is particularly interesting from a theoretical and probably also from a practical standpoint is that the experiments made by the Locomobile Company and by others, including myself, have demonstrated clearly that the catalytic coating, which accelerates combustion, has a decided tendency to counteract detonation, and that it is even possible by its use to increase the compression ratio quite considerably without the occurrence of a fuel knock, which on the same engine becomes immediately perceptible if at the higher compression ratio a plain head is substituted for a head with the catalytic coating.

I do not wish to go here into details which could be of no interest to you, but in order to make my statement on this point less vague, I wish to state that experiments showing the tendency of Katalite to counteract detonation have been made on engines with the Ricardo head, on a Packard Twin Six, on Willys-Knight engines, on Locomobile engine, and on Ford engines. The distinctive feature of this catalytic effect is, of course, that it takes place without any addition to the fuel and counteracts the detonation of present day unblended gasoline.

From a purely chemical standpoint, it might be interesting to note that there are various other ways beside the addition of the Midgley compounds and the use of a solid catalytic oxidizing coating, to counteract detonation in a more or less efficient manner. Increased turbulence, multiple spark plugs, central location of the spark plug, are among the remedies most frequently quoted, the effect of which, however, is not very far-reaching. It is obvious that all these more or less efficient remedies would have a tendency to accelerate combustion and to make it more complete. It is well known that hot spots have a tendency to induce detonation, which from my point of view is easily explainable as they would naturally tend to cause thermal decomposition.

Compression Factor

It is true that high compression engines have a tendency to knock, even without any preheating of the fuel while low compression engines do not knock generally speaking, even with considerable preheating, but the famous British engineer, Ricardo, has explained this in a way which is in satisfactory accordance with the views stated by showing that the higher compression ratio acts only on account of the proportionately diminished percentage of inert products of combustion which in a lower compression engine are present in an appreciably higher percentage and by lowering the flame temperature tend to counteract the decomposition of the fuel and detonation. If, by proper scavenging, the exhaust products are thoroughly eliminated from a low compression engine, detonation sets in quite readily. Detonation is always accompanied by a copious deposition of carbon which is, of course, also an indication of fuel decomposition; exhaust gas analysis made on engines which were detonating have also shown conclusive evidence of incomplete combustion and of decomposition of fuel.

It is also interesting to note that the tendency of fuels to detonate diminishes if their thermal stability increases as evidenced, for instance, by the great detonating tendency of kerosene and the

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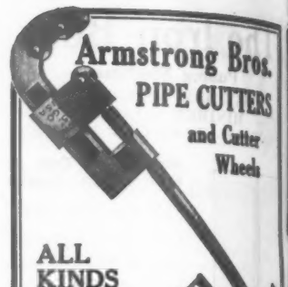

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very low detonating tendency of alcohol and benzol. From a scientific standpoint a very interesting case is the behavior of hydrogen which, according to my view, should not detonate at all; the data found in the literature on this subject is nonconclusive and conflicting, but on inquiry, Mr. Sparrow has informed me that the Bureau of Standards has made a very careful study of hydrogen as motor fuel, the results of which have not been published, but which have shown conclusively that hydrogen does not detonate at all. The statements to the contrary found in the literature would seem to be easily explained by the fact that the observers may have been deceived by the great tendency of hydrogen to preignite, owing to the fact that the spark plugs used with hydrogen are not cooled by evaporation around them as they are if gasoline or any other motor fuel is used.

Not True Pressures

In order to give you an idea of the extreme pressures observed during detonation, I wish to mention that according to most reliable observers pressures observed during detonation have been found to be considerably higher than they possibly could be if all the fuel would burn in a timeless way and if all the heat losses were eliminated; this would seem to dispose of any theory trying to explain detonation by a sudden ignition of the whole body of fuel contained in the combustion chamber and it would clearly confirm the view that the pressures observed are not true pressures of the whole body of gas but simply local impacts such as, in my opinion, one would naturally expect from a localized decomposition of large fuel molecules into a number of smaller molecules.

I must confess that I have not been able to agree with the views expressed by Mr. Midgley to the effect that the kinetic energy of fuel particles moving with great velocity through rapid combustion should cause such impacts. Apart from other conflicting evidence based on observations, it would seem to me that we are confronted here with a fundamental misunderstanding as to the nature of the process which can be supposed to take place. Propagation of a flame or even propagation of the so-called explosion wave does not mean a movement of particles but the propagation of a chemical reaction, just the same as the propagation of sound means the propagation of a mechanical disturbance with a certain velocity, but by no means the propagation of mechanical particles with this velocity.

I wish to state here again that this criticism on my part of certain views expressed by Mr. Midgley should not be construed as an effort to belittle the most interesting work done by Mr. Midgley and his collaborators. Facts and theories should be kept strictly apart as the theory must obviously be made to conform with the facts if the facts do not gibe with the theory. A discovery of a new and interesting fact, such as the discovery of the antiknock compounds is, of course, always very meritorious and deserves credit, but if a rather dogmatic theory is evolved from it and also accepted as a fact, it could easily happen that it would become a hindrance to further progress and research and in this way diminish rather than enhance the value of the discovery itself.

Changed Chemical Structure

So far, the change in the chemical structure of the internal combustion engine, brought about by the introduction of the catalytic coating called by me "Katalite," has been tried mostly on engines as they are now without any changes in the design of the engine other than in some cases the use of higher compression ratios. I consider it as possible and even probable that with certain changes, as for instance, increase of the surface of the combustion chamber, still greater effects could be produced which might have a bearing on the utilization of low grade fuels, running engines at constant compression pressure, and various other questions of design and operation.

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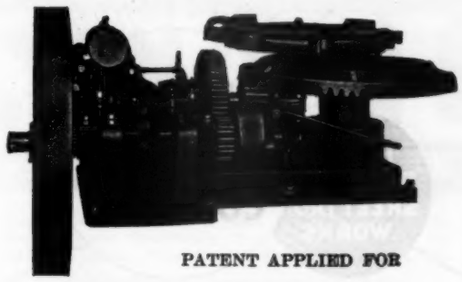
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BURMAH OIL CO., LTD., OPERATIONS IN 1923

The full report of the Burmah Oil Co., Ltd., for the year 1923, states that all fields expenditure has been charged direct to revenue, and the profit for the year, after charging income tax, contribution to employes' provident fund, directors' fees, etc., and writing off £333,237 for depreciation on refineries, fields electrification, pipe lines, and tankers and tank installations, is £2,203,896. The following amounts have been written off: Refineries account, £114,153; fields electrification, £100,000; pipe lines account, £20,000; tankers and tank installations account, £99,084; total, £333,237.

In the volume of oil produced, refined, and marketed by the company, 1923 surpassed the previous record year of 1922. This increased crude oil production, despite the protracted nature of the strike in the oil fields, has restored crude oil stocks to the full limits of available storage. The electrification of the Yenangyoung area was practically completed. Production from the Badarpur Field of Assam was disappointing. Operations elsewhere in that province have so far not reached a point where either their success or failure can be predicted. The efforts to prove oil in the Punjab having proved abortive, operations there have been abandoned. Improvements in refining plant and methods still further increased the percentage of marketable products and reduced fuel consumption.

Concentration and reconstruction of the refineries progressed satisfactorily, and one of the new benches of stills, brought into operation towards the middle of the year, has given results confirming the economies anticipated. The increased volume of products found a ready sale in usual markets at prices generally unchanged except in the case of petrol, which was affected both in India and for export by the world's lower values for that product. Prospects for the current year are meantime declared to be satisfactory.

OIL OPERATIONS IN INDO-BURMAH FIELD

The directors have informed the Premier Oil Co., Ltd., that in spite of a slight falling off in the production of those well in the Indo-Burmah oil fields, which have been pumping for over two years, the output continues steady, that for April amounting to 4,345 bbls. The total output from the commencement of operations to April 30 amounts to 135,999 bbls.

The total normal expenditure in Burmah, including development, is now covered by sales of crude oil, according to the report which adds that important possibilities on the Padaukpin field have been opened up recently by slightly deepening No. 9 well, which had become dry, a further 9 feet to 1,747 feet, with the result that for the last six weeks it has been flowing steadily at an average of 32 bbls. daily. Other wells on this field are to be deepened. Owing to financial necessity operations at well No. 13 on the same field were suspended, but its completion has now been ordered. On resuming work the hole, although dry when suspended, was found to contain 180 bbls. of oil. Mutually satisfactory terms have been arranged with an oil company about to commence drilling on adjacent territory for the use of the Padaukpin oil and water pipe line belonging to the Indo-Burmah Co.

A geologist who has been making inspection of the company's Okpon property has formed a favorable opinion of this field, and drilling will commence there as soon as conditions are favorable. If production is obtained a short extension of the pipe line will enable it to be handled. In spite of the reduction in expenditure, three strings of tools will be kept at work on the exploratory drilling referred to.

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CANADIAN GEOLOGIST HOPEFUL FOR ALBERTA

CHATHAM, Ont., June 21.—Speaking recently to the Lethbridge, Alta. Board of Trade, Dr. M. Y. Williams of the Geological Survey of Canada discussed the prospects of oil and gas in the border fields of Southern Alberta, adjoining the Kevin-Sunburst Field of Montana.

"I was not surprised," said Dr. Williams, "to learn that gas has been found in the Rogers-Imperial well, for I have always considered the well excellently located. It was somewhat of a surprise, however, to learn of the magnitude of the well. It is a most important finding and should stimulate work in the southern field. I feel very optimistic over the chances of oil."

Continuing, Dr. Williams said the chances were that oil would be found on the Alberta side at a considerably lower level than in the Kevin-Sunburst Field. His theory was that there are a number of folds radiating from the Sweetgrass Hills uplift, the Rogers well being on one of these, the Kevin-Sunburst Field on another. He considered these structures well located for the accumulation of oil. The presence of gas in such quantities he considered the best kind of a sign. Finding the oil was a tedious job, and the only means was to drill for it. The government representatives were anxious to assist the operators.

Dr. Williams considered the Quarantine Reserve area near Coutts an interesting prospect, despite the negative results so far secured there. He was especially anxious to see the Baalim well, Section 12-115w-4, which had been well handled and left in good shape, carried deeper to give the Quarantine Reserve a thorough test. The Moodie-Dundas well, close to Coutts, Section 4-1-15w4 he also considered well located.

D. Williams, who examined this area last year for the Geological Survey, will continue his work this year.

LINK-BELT CO. WINS ADVERTISEMENT PRIZE

That oil trade advertising is reaching a high stage of perfection is attested by the fact that the Link-Belt Co. won the first prize for its double-page spread in a recent issue of The Oil and Gas Journal, during the first annual prize exhibit of the Engineering Advertisers' Association of Chicago, staged a few weeks ago. The prize "ad" was addressed to the oil industry and featured the "rough-neck," one of the characters who is much in evidence in drilling operations.

The prize Link-Belt advertisement was one of a series described in an article in Class during February by Julius S. Holl, advertising manager, who discussed the importance of putting human interest into technical advertising. The vote of the other advertisers showed the correctness of the appeal used in his oil industry copy.

BRITISH TO BUY MORE CARS

Commenting on the reduction in the tariff on imported motor cars which Great Britain will put into effect August 1. Alvan Macauley, president of the Packard Motor Car Co., who has just returned from England, says: "Elimination of the tariff will reduce the price of American cars in England at least 20 per cent, placing them on a parity with many British cars. Undoubtedly increased business will result, as on the whole the American car is a considerably better product than its British competitor.

DEVELOP NOVA SCOTIA SHALES

A large number of mining licenses have recently been taken out over an area of from 150 to 200 square miles near Yarmuth, Nova Scotia. The indications in some places are reported to suggest that oil will be found in sufficient quantities to warrant careful investigation.

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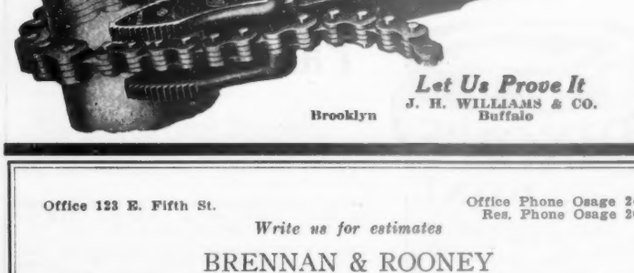

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OIL FIELD ACCIDENTS CAUSED 62 FATALITIES

Accidents in the California oil producing industry in 1923 caused the loss of 62 lives, according to a report made by H. C. Miller, associate petroleum engineer, Department of the Interior, to the Bureau of Mines. These 62 deaths were from oil-producing accidents alone and do not include fatalities at the refineries, on tankers, or on any work not directly connected with the drilling for and the production of oil. The number of fatalities for 1923 was 82 per cent greater than in 1922, the next most fatal year, with a record of 34 lives lost.

For the calendar years 1917 to 1923, inclusive, an average of 4.74 million barrels of oil were produced per fatality in the California oil fields. On this basis, the record for 1923, though a trifle below the average, is slightly better than that for 1922.

The average for the seven-year period, 1917 to 1923, inclusive, is 17.3 drilling wells per fatality. The 1923 average of 12.2 drilling wells per fatality shows that 1923, from the standpoint of safety, was an exceptionally bad year for the oil industry of California.

For the year 1923 the machinery in the derrick caused 25 of the deaths. A large percentage of these could have been avoided, the Bureau of Mines considers, had adequate and proper safeguards been installed.

Falls of persons were responsible for 12 deaths, 7 of which were caused by workmen falling from platforms in the derrick and four from falls off scaffolds and staging. The seven derrick accidents could have been avoided, the Bureau points out, had the unfortunates worn life belts while at work above the derrick floor, and, though the records do not show how many of these accidents were caused by the neglect of the employers to provide life belts or how many were caused by failure of the employes to use the belts provided, observations in the field indicate that the responsibility rests jointly with the employer and the employe.

Another outstanding fact developed through the study of the fatality list is the number of accidents that proved fatal to workmen through getting caught in the catline and wound around the cathead. There were seven of these fatalities in 1923 and four out of the seven men killed were drillers.

IRAK ACCEPTS BRITISH TREATY

The supplementary agreement between Great Britain and the Government of Irak (Mesoptamia), based on the treaty signed on October 10, 1922, has been unexpectedly ratified by a vote of 38 to 25 in the Mesopotamian Parliament. Eight members abstained from voting. The agreement, signed April 30, 1923, and now published, treats of the problems of military defense of the country, its judicial status and the financial arrangement between the mandatory power and the Government of Irak. A resolution was adopted stating that Irak is unable to fulfill the responsibilities imposed upon it by the treaty, but is confident that Great Britain does not intend to oppress Irak. The resolution concludes: "Th'is treaty is invalid if Great Britain does not protect Irak's entire rights in the Mosul vilayet." The agreement is to be communicated to the League of Nations.

GUSHER AT BAKU

A message from Baku says a gusher of unprecedented volume has been struck at Surukhany, and the pressure continues unabated. The fourth anniversary of the nationalization of the Baku petroleum enterprises recalls that during the four years Baku has exported to the Soviet Republics 695 million poods of naphtha and naphtha products. Exports to foreign countries amount to 60 per cent of the pre-war quantities. The new Surukhany petroleum well is yielding 110,000 poods daily.

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CANADIAN COMMONS DEBATES OIL BOUNTY

OTTAWA, Ont., June 14.—Sir Henry Drayton, formerly Minister of Finance, made a plea in the House of Commons for the retention of the crude oil bounty of 1½ cents a gallon which the Government proposes to abolish by July 1, 1925. Sir Henry said there were 3,500 oil wells in Western Ontario, with an annual production of 160,000 bbls. The counties of Lambton and Kent alone produced 145,000 bbls. On the basis of existing conditions the House must face the wiping out of an industry. In 1922, $93,636 had been paid in bounties. This was not a large sum in relation to the amount of business carried on. Investigations by oil geologists had substantiated the claims of the producers.

The direct effect of the Government's action in cutting off this bounty, would be to deny employment to a number of people. Quoting statistics covering the profits made by oil producers for 18 years past, Sir Henry claimed that profits were only 2.01 per cent a year, and the bounty was 84 per cent of the whole profits. The extinction of the bounty had been proposed because of a fear that the discovery of large oil deposits in the West might put a heavy burden on the treasury. That danger, however, had not materialized. Moreover, it could be guarded against by placing a limit on the bounty.

Dr. Murray MacLaren, member for St. John, Albert, in New Brunswick also protested at the abolition of the bounty. The oil industry in his constituency had had from a million to a million and a half dollars of British capital invested in it, and was in a developmental stage.

Classified Advertisements Pages 117-118-119

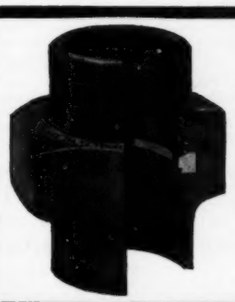
WELL IN LOWER SILESIA

Germany, after having recently announced the important oil find near Neinbager of the D. E. A. in a district where oil has been found and exploited for a number of years, another report comes from Cottbus (Brandenburg) of a new oil find in the region of Auras and Schorbus (Lower Silesia). The new well sunk to a depth of 423 meters, came in with a gusher five to six meters high. This oil, too, is of a very heavy gravity and suitable for lubricating purposes only. A pipe line has been laid to facilitate transportation. The oil is to be refined at Berlin for the present, but steps will be taken for the establishment of a plant in the neighborhood of the well in order to avoid excessive freights. Oil is reported to have been found in the region of Stralsund (Pomerania) recently.

LEGAL

TRIBAL OSAGE OIL LEASES AT PUBLIC AUCTION, JUNE 30, 1924, BY U. S. GOVERNMENT

June 30, 1924, at Pawhuska, Oklahoma, about 20,000 acres will be offered for oil leases in quarter section tracts. Bids will be for bonus in addition to royalties, 25% payable on day of sale, balance in 3 annual installments, with acceptable security. Within advertised area there are about 8,970 oil wells producing from 1 barrel to 4,000 barrels each, the total daily production for April, 1924, being about 114,000 barrels; also, there are about 328 wells drilling. All lands are now leased separately for gas. Blue print maps of area advertised, showing tracts producing oil or gas, can be had for 50 cents each, also logs of producing oil or gas wells for 25 cents each well. Write U. S. Superintendent, Osage Agency, Pawhuska, Oklahoma, for maps, logs, or other information.



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SPECIAL DRAFTING

Oklahoma-Kansas and Eastern Pipe Line Report

Oklahoma-Kansas Pipe Line Statement For April

Runs

*Prairie Pipe Line Co....	2,730,000	91,000
Gulf Pipe Line Co.	1,181,979	39,399
Texas Pipe Line Co.	457,531	15,251
Magnolia Petroleum Co..	1,129,546	37,651
Empire Pipe Line Co.	879,257	29,309
Cosden Pipe Line Co. ...	811,343	27,045
*Sinclair Pipe Line Co...	1,245,000	41,500
Other lines	7,125,000	237,500
Total April	15,559,656	518,655
Total March	15,303,951	493,676
Difference	255,705	14,979

*Estimated

Shipments

*Prairie Pipe Line Co....	3,747,013	124,904
Gulf Pipe Line Co.	1,062,854	35,429
Texas Pipe Line Co.	464,648	15,488
Magnolia Petroleum Co...	1,027,936	34,265
Empire Pipe Line Co. ...	704,022	23,467
Cosden Pipe Line Co.	684,042	22,801
*Sinclair Pipe Line Co. ...	1,889,611	62,987
Other lines	6,855,000	228,500
Total April	16,435,126	547,841
Total March	17,037,103	549,587
Difference	601,977	1,746

*Includes shipments of Texas crude oil.

Stocks

*Prairie Oil & Gas Co.	21,850,000
Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line Co. and Gypsy Oil Co.	9,417,866
Texas Co.	7,049,232
Magnolia Petroleum Co.	8,342,030
Empire Pipe Line Co.	2,994,705
Cosden Pipe Line Co.	2,962,147
*Sinclair Crude Oil Purchasing Co.	29,150,000
Carter Oil Co.	17,747,326
Other lines	8,500,000
Total April	110,013,306
Total March	108,781,907
Difference	1,221,399

*Estimated.

Note—Stocks do not include approximately 8,000,000 bbls. of crude oil held in storage on private tank farms and leases.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for April and May:

	April, '24	May, '24
Nat. Transit	205,042.09	199,626.14
S. W. Pa. P. L. ...	88,381.19	85,544.16
Eureka P. L.	380,526.94	372,494.35
Buckeye P. L. (Macksburg) ...	261,541.19	258,024.34
Buckeye P. L. (Cleveland)	16,107.20	15,210.59
Buckeye P. L. (Lima, etc.)	142,396.88	145,504.50
Indiana P. L.	12,436.48	13,812.12
Cumberland P. L...	366,889.53	372,609 80
N. Y. Transit	16,513.19	19,947.74
Tidewater P. L.	141,622.32	152,075.52
Pure Oil P. L.	183,828.77	188,558.69
Emery P. L.	35,132 01	35,511.41
Indian Ref.	231,387.33	66,447.27
Paragon Dev.	48,415.67	41,802.11
Pittsburgh P. L. ..	8,169.04	8,903.97
Swiss P. L.	.....	.....
Rigs. Ref.	3,346.25	5,124.29
Total	2,131,736.08	1,980,197.00
Daily average ...	71,057.87	63,941.84

Note—Indian Refining Co. also reported other receipts of 293,234.66 bbls. Paragon Refining Co. had other receipts of 174,682.85 bbls. Paragon Development Co. had other receipts of 5,289.80 bbls. Pittsburgh Pipe Line had other receipts of 4,465.16 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for April and May:

	Apr'l, '24	May, '24
Nat. Transit	543,212 41	373.131.02
S. W. Pa. P. L....	287,478.70	253,585.74
Eureka P. L.	145,075.27	112,059.21
Buckeye P. L. (Macksburg) ...e	89,013.28	100,473.73
Buckeye P. L. (Cleveland)	728.00	1,214.64
Buckeye P. L. (Lima, etc.) ...	656,008.49	680.684.61
Indiana P. L.	900,901.21	931.269.90
Cumberland P. L...	144,619.49	151,162.89
Southern P. L. ...	.....	.....
Crescent P. L.	.....	.....
N. Y. Transit	592,141.87	507,491.63
Northern P. L. ...	120,025.15	80,309.14
Tidewater P. L. ...	138,842.18	130.310.85
Pure Oil P. L.	200,612.67	204.887.66
Emery P. L.	23,002.49	38.385.97
Paragon Ref.	191,612.24	181,821.26
Indian Ref.	325,499.86	381.740.52
Paragon Dev.	56,687.68	44,760.63
Pittsburgh P. L. ..	12,861.46	11,634.19
Total	4,428,322.45	4,184,923.59
Daily average ...	147,610.75	134,997.50

Note—Indian Refining Co. also reported other deliveries of 12,698.94 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of April and May were as follows:

	April, '24	May, '24
Nat. Transit	1,105,932.47	969,330.61
S. W. Pa. P. L....	717,218.99	740,981.21
Eureka P. L.	1,792,565.99	1,910,892.33
Buckeye P. L. (Macksburg) ...	489,229.60	576,679.85
Buckeye P. L. (Cleveland)	17,746.31	16,959.02
Buckeye P. L. (Lima, etc.)	3,054,622.29	3,184,697.93
Indiana P. L.	618,065.87	628,594.63
Cumberland P. L...	556,556.10	568,123.90
Southern P. L. ...	436,255.29	512,524.99
Crescent P. L.	50,361.96	80,724.80
N. Y. Transit	771,716.68	704,366.99
Northern P. L.	588,009.15	763,364.39
Tidewater P. L. ...	.....	.....
Pure Oil P. L.	373,501.89	359,255.82
Emery P. L.	23,364.52	21.790.55
Paragon Ref.	184,092.70	175.717.01
Indian Ref.	127,303.63	101,113.46
Paragon Dev.	9,956.12	11,370 55
Pittsburgh P. L. ..	5,662.00	7,521.89
Swiss P. L.	.....	.....
Riggs Ref.	580.52	1,299.14
Total	10,922,742.08	11,335,309.07
Increase	15,989.92	412,566.99

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of April and May, showing the gross stocks of the above fields:

	April, '24	May, '24
Pennsylvania	3,744,977.96	3.923.093 00
Lima	1,043,699.80	1,113,472.67
Kentucky	1,494,197.29	1,441,241.81
Mid-Continent	4,638,570.53	4,779,382.96
Illinois	91,296.59	78,118.63
Total	10,922,742.08	11,335,309.07

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1921	1922	1923	1924
Jan.	64,460	67,702	75,790	62,638
Feb.	70,054	75,096	71,093	68,023
Mar.	68,555	78,531	76,592	68,721
April	65,030	75,462	75,614	71,058
May	65,466	77,592	77,865	66,942
June	62,438	76,193	77,592	.....
July	59,486	76,435	71,879	.....
Aug.	64,888	79,337	76,910	.....
Sept.	60,110	78,512	72,368	.....
Oct.	57,683	77,299	76,256	.....
Nov.	54,479	75,313	70,762	.....
Dec.	61,000	73,351	69,271	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for past four years:

	1921	1922	1923	1924
Jan.	115,550	119,791	171,067	145,518
Feb.	96,736	111,362	164,219	148,732
Mar.	84,168	127,752	185,487	147,098
Apr.	101,015	127,068	170,751	147,611
May	100,253	127,840	177,102	134,997
June	105,037	137,688	173,898	.....
July	97,096	137,872	168,330	.....
Aug.	101,652	153,275	142,766	.....
Sept.	117,440	158,761	137,266	.....
Oct.	105,728	165,345	134,597	.....
Nov.	121,803	165,677	131,426	.....
Dec.	104,023	172,861	139,909	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields including oil received from other lines at the close of each month for the past three years:

Jan.	16,297,858	14,040,567	12,967,201
Feb.	17,009,293	14,028,427	11,444,860
Mar.	16,877,937	13,873,146	10,996,732
Apr.	16,777,842	13,737,575	10,922,742
May	16,948,962	13,815,622	11,335,309
June	16,810,169	14,541,253	.....
July	16,669,286	14,645,584	.....
Aug.	16,235,229	14,770,539	.....
Sept.	16,228,545	14,803,444	.....
Oct.	15,757,746	14,504,171	.....
Nov.	15,171,972	14,167,726	.....
Dec.	14,323,765	13,444,361	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and accounted in the stocks and averages reported above:

1923—	Receipts	Shipm'ts	Stocks
May	3,538.73	4,856.42	23,731.2
June	2,927.71	4,742.78	21,916.1
July	2,996.64	1,471.57	23,441.2
Aug.	3,199.07	3,769.34	23,070.9
Sept.	2,829.79	5,822.38	19,912.2
Oct.	2,694.23	5,251.81	17,354.7
Nov.	2,980.66	4,150.98	16,184.4
Dec.	2,893.07	3,499.37	15,578.2
1924—			
Jan.	2,942.19	8,641.72	9,843.7
Feb.	2,151.78	1,926.56	10,068.9
March	3,398.78	1,716.29	11,751.4
April	3,311.84	2,966.78	12,096.5
May	3,036.50	5,323.21	13,809.1

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, June 1	8,191,717.11
Runs from wells	723,111.01
Other receipts	192,911.71
Regular deliveries	473,719.27
Other deliveries	396,203.66

The amount of Illinois oil run by the Tidewater Pipe Line Co. in May was 29,363.66 bbls., and deliveries were 38,625.06 bbls. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois field as follows:

1923—	Runs	Deliveries
May	624,107.98	635,515.09
June	582,511.82	599,137.77
July	594,653.42	499,319.17
August	594,747.94	367,152.92
September	542,561.59	346,925.60
October	576,867.09	347,812.92
November	546,859.43	285,692.09
December	534,185.04	282,542.62
1924—		
January	493,337.25	280,791.90
February	535,490.70	353,611.91
March	611,289.36	369,542.21
April	574,356.43	333,546.10
May	751,080.44	616,414.62

The Tidewater Pipe Co., Ltd., also delivered in May, 220,647.98 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 389,583.88 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Av. bbls. per wk.—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All-Ports
January	138,800	15,400	665,400	160,400	100,600	1,080,600	.....	172,000	.....	.....	172,000	1,253,08
February	90,250	36,250	832,000	208,250	36,250	1,203,000	.....	195,250	.....	.....	195,250	1,398,25
March	42,455	17,388	623,455	209,321	77,455	970,067	.....	.....	.....	.....	.....	970,06
April	39,669	17,969	614,369	88,200	52,269	812,476	.....	.....	.....	.....	.....	812,47

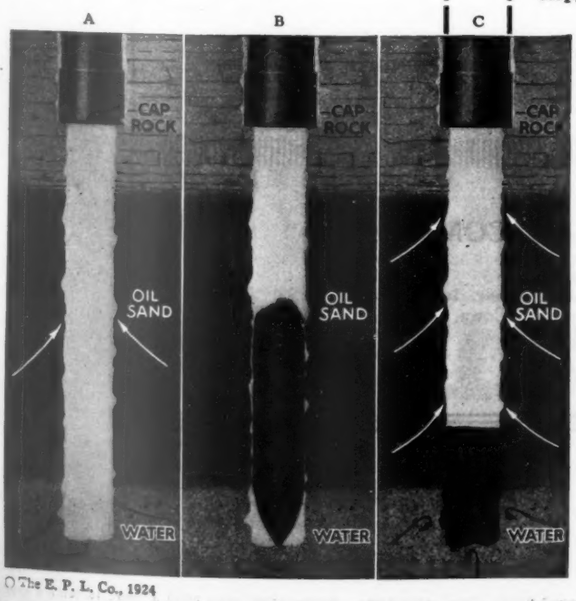
AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All-Ports
November	67,200	108,869	270,669	122,500	195,060	764,200	345,490	359,331	147,469	33,367	886,731	1,646,17
December	105,000	133,679	240,254	144,739	300,545	924,217	420,224	492,700	186,949	51,258	1,151,149	2,075,36
January	112,800	118,200	552,000	97,800	215,800	603,200	358,800	348,000	137,800	20,800	773,200	1,588,40
February	134,750	175,750	195,250	102,750	299,250	907,750	372,500	296,000	190,250	36,500	895,250	1,803,00
March	148,358	141,806	283,458	124,642	292,642	990,906	463,806	365,358	223,353	55,545	1,108,261	2,099,16
April	152,369	154,931	319,900	94,962	248,969	971,131	382,900	348,131	119,000	15,869	865,900	1,837,03

GROSS PRODUCTION BY MONTHS AND DAILY AVERAGE IN THE U. S. FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming-Montana	Other fields	Total
1923—										
May:	Month	21,535,365	15,658,782	8,826,839	2,852,217	3,250,846	2,298,804	3,650,903	3,550,357	61,624,113
	Daily average	694,689	505,122	284,736	92,007	104,866	74,155	117,771	114,527	1,987,874
June:	Month	22,667,106	15,572,730	9,129,282	2,797,830	3,401,172	2,086,670	3,470,176	3,413,155	62,536,121
	Daily average	755,570	519,091	304,309	93,261	113,372	69,392	115,672	113,771	2,084,894
July:	Month	25,262,082	15,260,184	11,258,042	2,448,566	3,713,738	1,882,481	4,245,547	3,334,110	68,904,750
	Daily average	814,906	492,264	382,518	78,986	119,798	60,725	136,953	107,552	2,193,702
August:	Month	26,440,005	14,049,076	12,157,429	2,316,320	3,292,580	1,952,349	4,290,406	3,479,077	67,977,242
	Daily average	852,903	453,196	392,172	74,720	106,212	62,979	138,400	112,228	2,192,814
September:	Month	25,762,487	12,812,220	12,879,682	2,234,730	3,164,900	1,787,430	4,561,550	3,269,551	66,472,550
	Daily average	858,750	427,074	429,323	74,491	105,497	59,581	152,052	105,468	2,216,750
October:	Month	24,576,400	12,961,752	15,933,383	2,336,346	3,120,274	1,837,990	3,540,880	3,475,913	67,733,938
	Daily average	792,787	418,122	513,980	75,366	100,654	59,290	114,222	112,126	2,185,680
November:	Month	22,397,848	12,334,620	15,556,507	2,268,840	2,973,000	1,816,860	4,792,466	3,138,464	65,278,605
	Daily average	746,595	411,154	518,550	75,628	99,100	60,562	159,782	104,615	2,175,93
December:	Month	21,899,247	12,232,259	10,065,856	2,345,150	4,017,850	1,919,574	3,304,326	3,147,512	60,932,07
	Daily average	706,427	394,589	324,705	75,650	129,608	61,922	106,591	101,543	1,965,03
1924—										
January:	Month	20,912,500	12,115,353	10,089,291	2,254,878	3,686,680	1,827,053	4,631,395	2,955,500	58,472,65
	Daily average	674,597	397,263	325,461	72,738	118,925	58,937	149,400	95,339	1,886,66
February:	Month	19,341,226	12,236,637	10,372,024	2,112,863	3,302,750	1,697,892	4,276,706	2,997,701	56,336,79
	Daily average	666,939	421,953	357,656	72,857	113,888	58,548	147,428	103,369	1,943,24
March:	Month	19,913,262	13,367,851	11,501,440	2,206,425	3,882,695	1,791,049	3,992,315	3,257,759	59,913,79
	Daily average	642,363	431,221	372,450	71,175	125,248	57,776	128,784	105,089	1,933,47
April:	Month	19,299,849	13,482,240	11,755,890	2,268,540	4,068,225	1,644,840	3,880,410	3,231,000	59,630,99
	Daily average	643,363	449,408	391,863	75,618	135,608	54,828	129,347	107,700	1,987,76
Total, 12 months		270,007,377	162,083,734	140,125,655	28,442,695	41,874,710	22,542,992	48,626,080	39,250,399	753,963,64
Daily average		737,725	442,851	382,830	77,712	114,412	61,593	132,885	107,243	2,060,35

Damming the Flow of Water by Plugging Oil Wells with EAGLE LEAD WOOL



HUNDREDS of oil wells were reclaimed for profitable production during the past year by plugging them with Eagle Lead Wool. In every case, Eagle Lead Wool either shut off the flow of water entirely or else greatly reduced it. By its use operating companies have avoided the heavy burden of lifting water and also the expensive process of taking out the water, emulsified with the oil. Eagle Lead Wool has enabled them to get more barrels of oil out of their wells and get that oil free from water. Eagle Lead Wool stops the flow of water at its source and keeps it stopped.

Lead Wool for plugging oil wells is a proven thing. While its use has only become general during the past year, the results obtained have shown not only its efficiency, but also its dollar and cents value in reclaiming production. Wells that were considered as played out, and wells that were considered a total loss, have from a producing standpoint, been profitably reclaimed.

In the drawings at the left [A] represents an unplugged well, in which the water could mix freely with the oil. [B] shows the cartridge container in place, ready for tamping. [C] the well when completely plugged, the water completely stopped.

The method of plugging oil wells with Lead Wool is an Eagle-Picher development worked out by Eagle-Picher men on oil operations in the Mid-Continent field. The material is inserted in cartridge-like containers dropped into the well and then tamped. It forms a perfect seal, as the Lead Wool is forced into every irregularity of the wall and under pressure consolidates to make a plug of practically solid lead, shutting off every water course at its source. Eagle Lead Wool is pure double refined lead. It is permanent and non-corrosive. The process is described in detail in Lead Wool for Plugging Oil Wells.

Eagle Lead Wool is stocked by most of the leading oil field supply companies in the Mid-Continent Field. Ask for it.

Send for your copy of "Lead Wool for Plugging Oil Wells," or write us for detailed suggestions on oil wells in which you are troubled with water.

The EAGLE-PICHER LEAD COMPANY · JOPLIN, MO.

EAGLE *For Plugging Oil Wells* **LEAD WOOL**

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Years of satisfactory service result from the high tensile strength and close grain of the metals produced in our foundries and the closely gauged work done in our machine shops. And these years are increased by the renewable features in all Pratt & Cady lines of valves. In the 300 pound test gate valves it is the symmetrical wedges which may be reversed when the wearing face has given its full service.

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The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 16, 1911, at the postoffice at Tulsa, Okla., under the Act of March 3, 1879.

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SIMPLICITY—the true test of a designer's ability. A machine that is simple is also easy to operate. Experienced labor is not required. There are no complicated mechanisms. Interruptions in production schedules are avoided.

(*Continued in the next issue.*)

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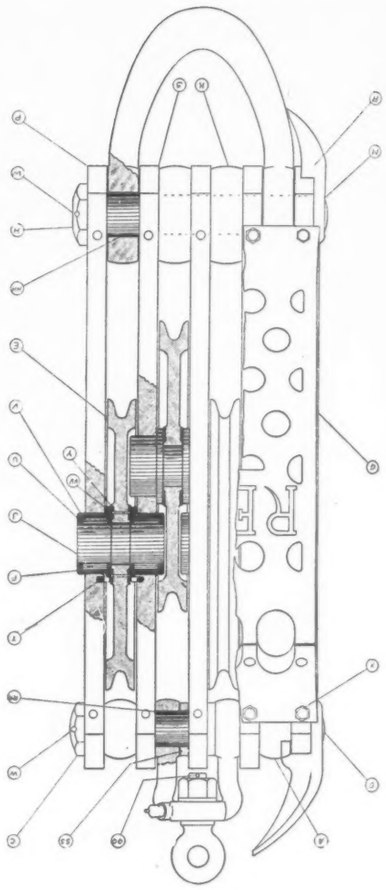

In this new traveling block our engineers have developed a stronger and more durable unit, with 200% more bearing surface than found in ordinary traveling blocks. Each of the sheave wheels has an individual pin with roller bearings, lubricated by the positive Alemite system. The pin rotates with the wheel. The sheaves are of special alloy steel with hardened rims. An internal spacing bushing on the clevis prevents the latter from ever binding. One hundred per cent guard protection is embodied. The cable holes in the guard are 5 degrees tip, ample to prevent cable rubbing.

Greater Durability and Lower Upkeep Cost

With this new traveling block you can do the work faster and with absolute safety. Every part of the block embodies correct engineering principles. The block is 62 inches in height equipped with 30-inch sheaves, and the overall length 93 inches. The net weight is 4250 pounds.

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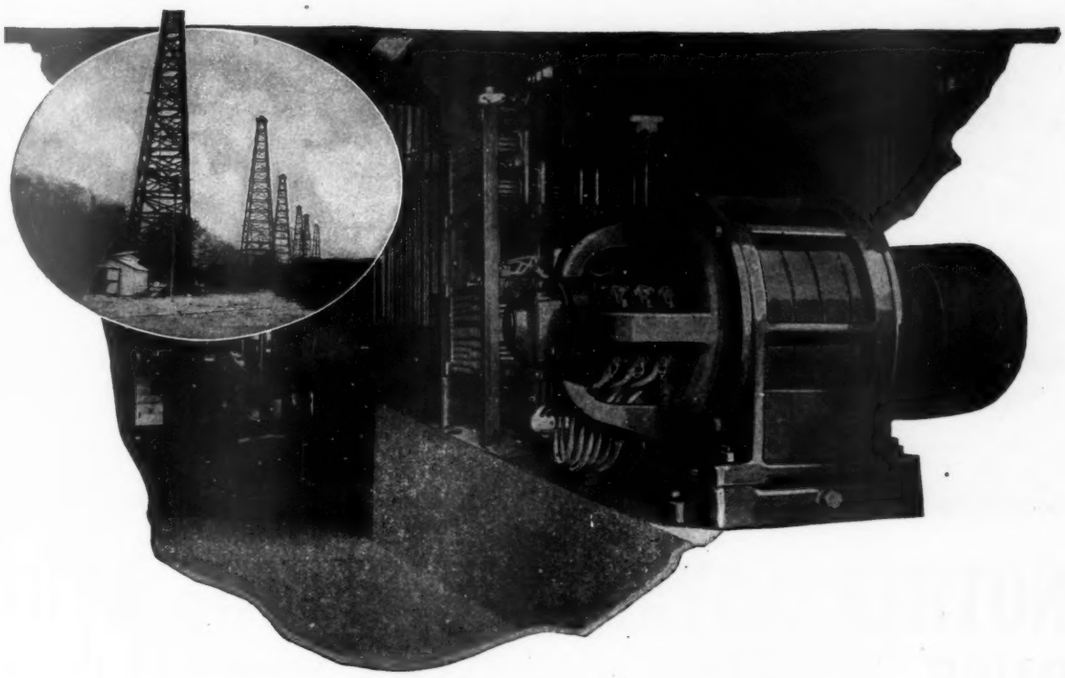

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G-E motor drive saves from $500 to $3,000 per well in the annual production cost, whether replacing gas or steam engine operated leases.

The saving in fuel, in some cases as high as 90%—the decrease in avoidable shut-downs and delays (chargeable to engines)—the production increase (at least 15%)—and the lower maintenance cost of electric drive (less than 1% of first cost) soon account for the annual saving named. Another factor in increasing production is the uniform pumping speed of the electric motor.

G-E two-speed oil well pumping motors are consistently proving their versatility in the varied operations in producing oil. They are readily applied to emergency drilling with small tools and to pulling casing. It is standard practice, however, to use separate electrical equipment for drilling, and to install a pumping motor as each well is completed.

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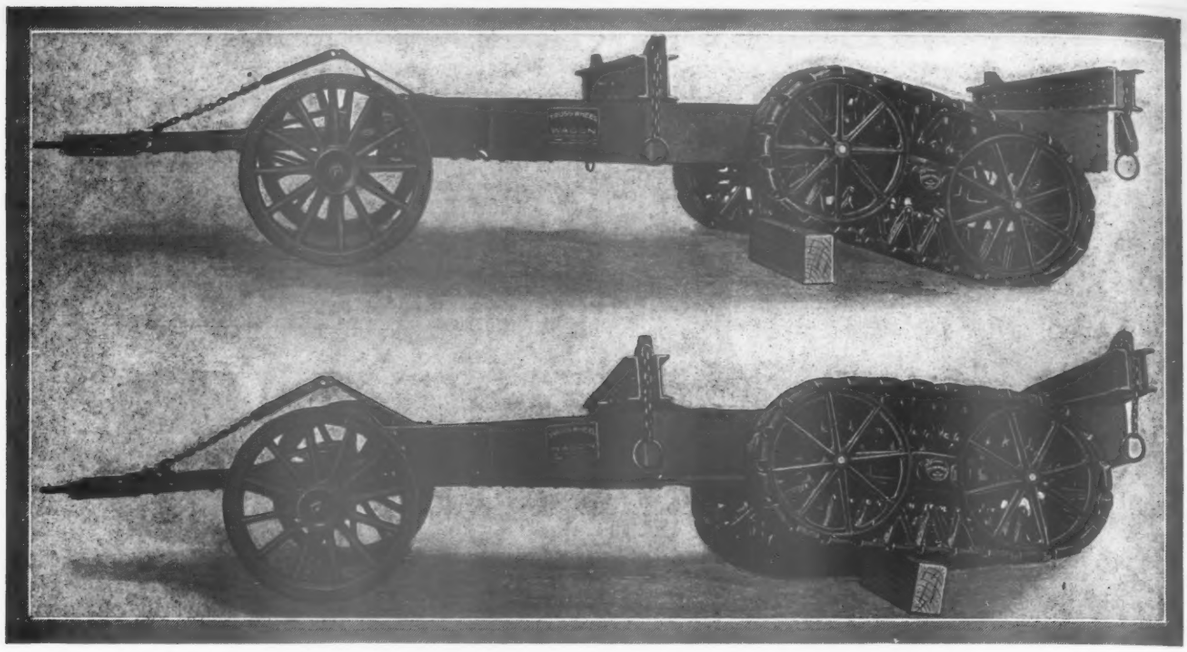
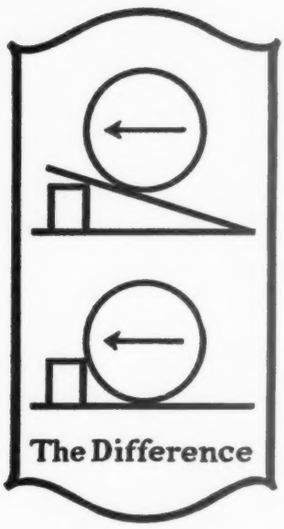


ANOTHER ADVANTAGE OF THE ATHEY TRUSS WHEEL

Track Serves as Inclined Plane for Mounting Obstacles



The Athey Truss Wheel not only offers a great advantage in soft going, but over rough, uneven roadways its wheels surmount the bumps with more ease than do round wheels. This means that less power is required on rough roads.

The above illustration shows how the track serves as an inclined plane, up which the wheels transport heavy loads with much less power than would be required with round wheels.

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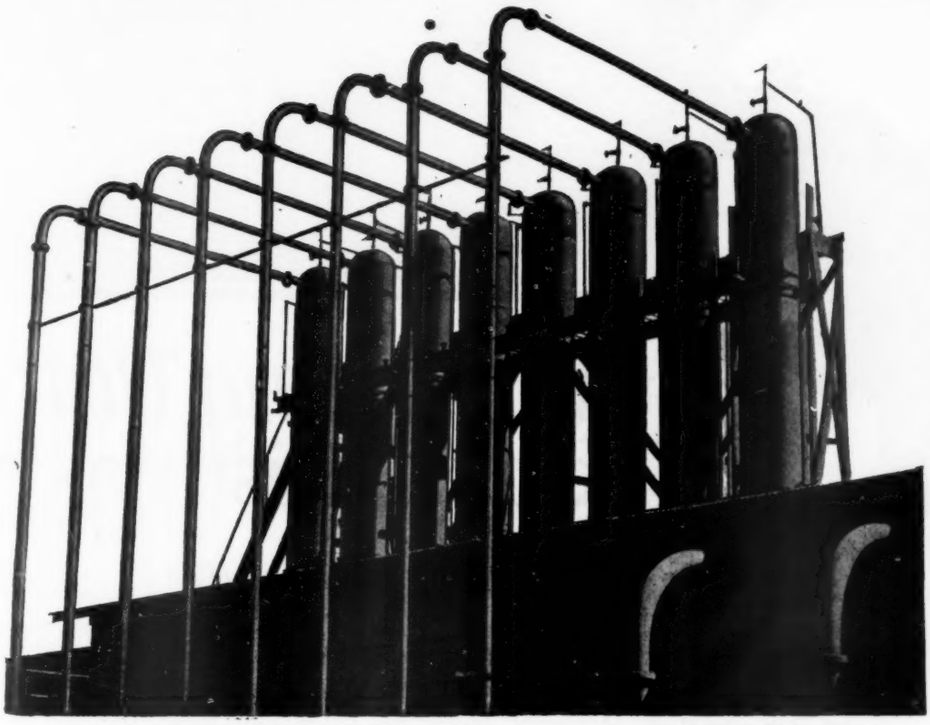
IT BRIDGES THE SOFT SPOTS

HAMMER-WELDED TANKS AND STILLS



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A double flange collar for mounting the vent on the tank roof;

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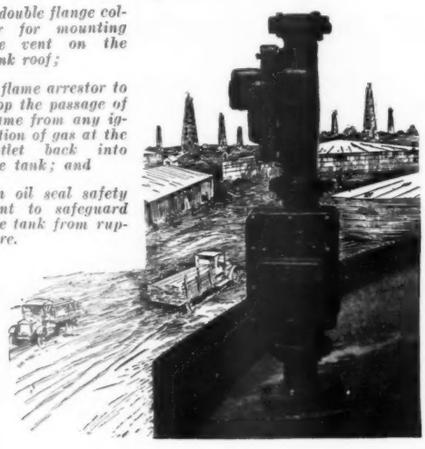
An oil seal safety vent to safeguard the tank from rupture.



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Your tanks of oil start suddenly to vaporize—huge clouds of it. Vent capacity is strained. (It's like the flood tearing at the river's dam which is sufficiently large and strong under **all ordinary circumstances.)**

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The OCECO (type C) takes care of such emergencies. It also operates when the conservation valve might fail (because of faulty installation, maintenance, or other cause over which no one has any control and which applies to any conservation vent valve.)

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It is absolutely fool-proof.

Although only recently put on the market, it has come into extensive use and has received the hearty endorsement of such oil companies as the Atlantic Oil Producing Company, Humble Pipe Line Company, Mexican Petroleum Corporation, Pure Oil Company, Sun Oil Company, and others. For some, it has demonstrated its value already by acting in cases of emergency and saving many times its comparatively small cost.

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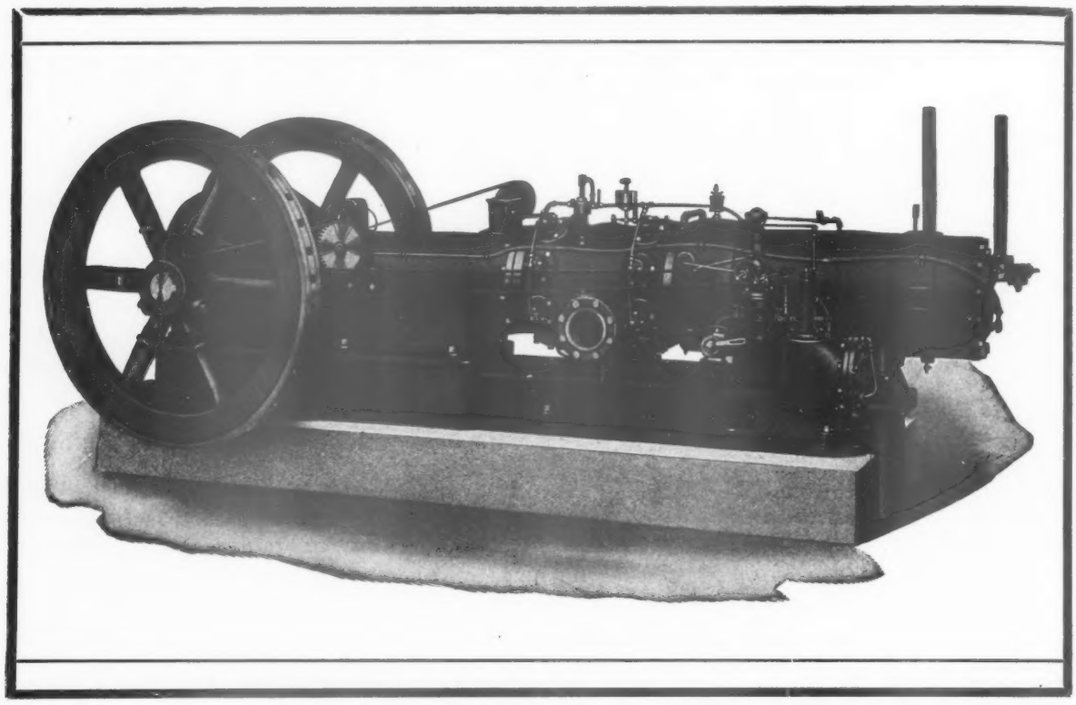

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Simplicity is hard to attain. When manufacturers make an automobile with a few less parts, they brag about it. And when a Lincoln delivers a Gettysburg address in words of one syllable the world remembers.

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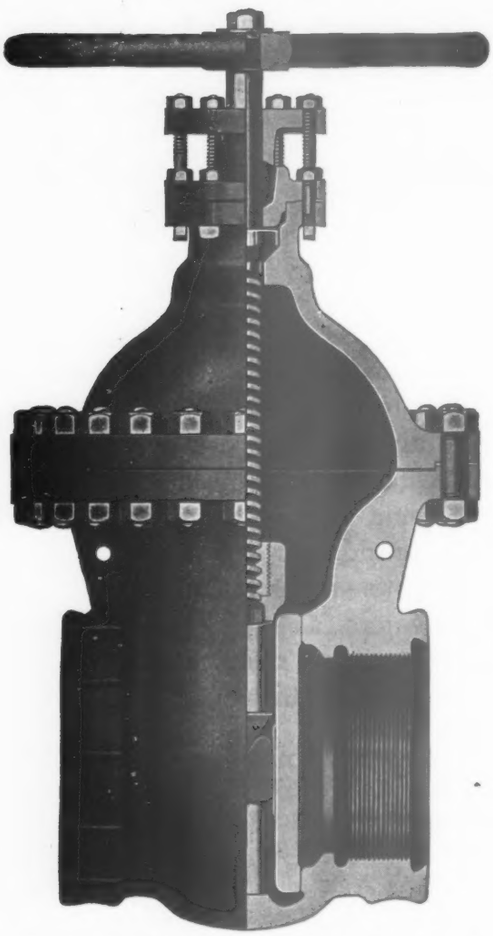

Chapman List 108 cast steel drilling gate, made in all sizes, both screw and flange end

Chapman Cast Steel Drilling Gates are made of Chapman Electric Steel.

Note construction—a spherical cap with circular flange of ample thickness to provide greatest possible strength.

Spindles of special, heat-treated steel, with integral, self-packing collar.

Gates and seats ground to a mirror-like surface, and overlapped to produce tightest contact possible; all edges bevelled to protect this surface.

Positive wedging action.

All bolts of special, heat-treated steel, producing tightest joint possible.

Both in both screw and flange end.

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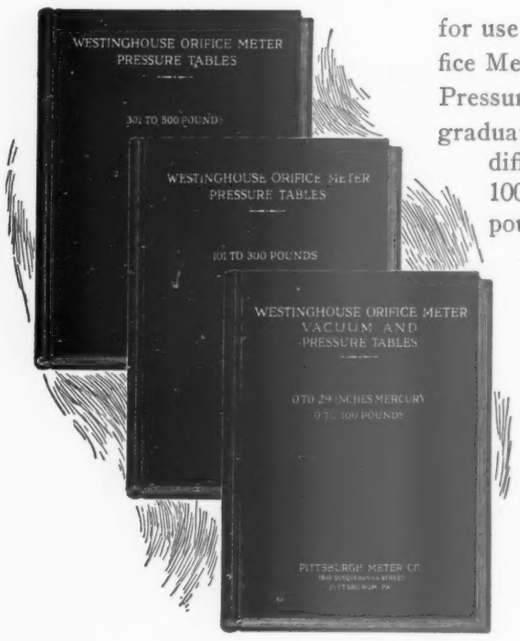
for measuring large volumes of gas, embodies a Differential Mercury Gauge and Static Pressure Gauge, combined in one outer case; the records of the two gauges being made on the same chart in different colored inks.

Pressure Extension Tables



for use in figuring Charts of Orifice Meters, of any make. These Pressure Extension tables are graduated in tenths of an inch for differential pressures up to 100 inches, and in one-half pounds up to 50 pounds on the static pressure side, thus eliminating to a great degree the necessity of taking average figures when making monthly calculations or figuring charts; this greater accuracy resulting in a net gain to the users of these tables.

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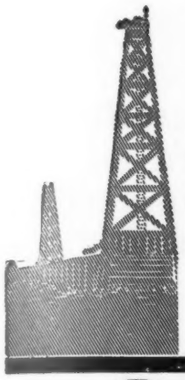
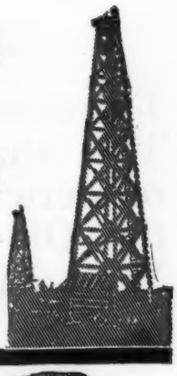


High Repeat Orders *mean* Lower Sales Expense *and that means* More Value Per Dollar



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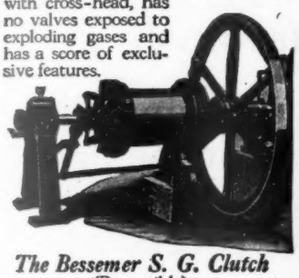
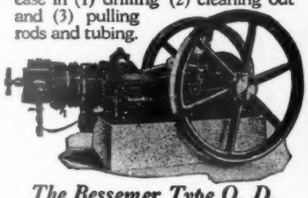


The Bessemer S. G. Clutch
(Reversible)
The latest big-scale improvement in Bessemer equipment. It will show you new standards in speed and ease in (1) drilling (2) cleaning out and (3) pulling rods and tubing.



The Bessemer Type O. D. Engine
Operates on either oil or gas with only a slight change in equipment. A proper engine for any oil field need—especially where a failure of natural gas threatens.

If Bessemer users didn't continue to order Bessemers almost automatically after their first trial, Bessemer sales-expense would climb rapidly.

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Buy Bessemers and you pay for solid value in material and painstaking workmanship. Buy Bessemers and you pay the least for sales-expense. Buy Bessemers once and you will continue to buy Bessemers indefinitely.

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(With Bessemer Compressor Cylinder)
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(15 to 180 H. P.)
Firmly established in its popularity, this engine with enclosed crank case, cross-head construction, patented combustion chamber and other features is without an equal for economical trouble-free performance.

Bessemer Roller Pumping Powers
—will give you better service, will wear longer, will require less attention, and are less liable to break because of nine important features.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

The extremes to which one may go in the operation of The Sharples Process are well represented at the refineries of Cosden & Company, Tulsa, Oklahoma and the Ohio Valley Refining Company in St. Marys, West Virginia.

At Cosden & Company, the Process is utilized for the manufacture of an extra heavy bright stock—a bright stock having a viscosity around 200 at 210.

At the Ohio Valley Refining Company, the Process is used for the dewaxing of a long residuum—the whole lubricant cut of the crude, from which a variety of straight run, low pour point lubricants with a viscosity ranging from 60 to 85 at 210 are manufactured.

Both plants are identical in the type of equipment and construction. Either could be substituted for the operation of the other without the slightest alteration. It is this unusual flexibility of The Sharples Process which allows the refiner to alter his operation to meet any market condition.

Sharples-made lubricants are from paraffine bearing crudes. The pour point of the finished oil is from 25° F. down.

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